

APRIL 8 1924
LIBRARY

The Electragist

TRADE MARK REG. U.S. PAT. OFFICE

TK 1*
E 39
V. 23

Volume 23 No. 6

Official Journal of ASSOCIATION OF ELECTRAGISTS—International.

APRIL, 1924



Flood Lights

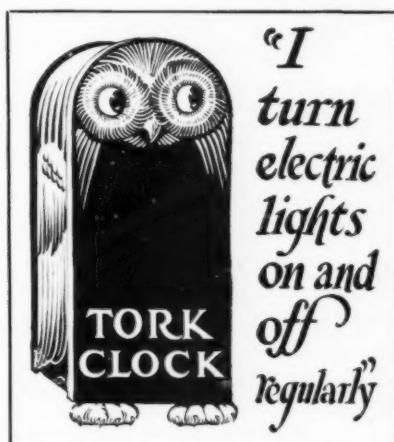


Store Windows



Protective Lights

Install in place of the switch nobody turns regularly. Costs little to buy and nothing to operate.



"I
turn
electric
lights
on and
off
regularly"

Where Regular Lighting Counts

ANYBODY can turn electric lights on and off. Nobody does it regularly.

No business firm will knowingly permit its reputation or profits to be sacrificed because its lighting is not used when it should be.

Every business needs me somewhere. Your own business—to begin with. All around you are business men waiting for you to sell them a Tork Clock. It will then be practicable for them to use light instead of some less effective means for advertising and selling merchandise.

Repeat these few remarks and you will reap orders. Begin this way "You need a



Outdoor Advertisements



Electric Signs



Hot Houses



Get complete Tork Clock bulletin from
TORK COMPANY, 8 West 40th St.
New York.



Annunciators



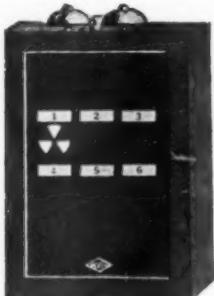
Surface Type
Metal—Black—Gravity—Cat. No. 373
Metal—White—Gravity—Cat. No. 374

When requirements call for a *good* Announcer at a *low price* you can do no better than to furnish DeVEAU *Gravity Drop Announcer*.

First class construction throughout and exceptionally well finished—furnished with standard markings numbered from 1 up.



Surface Lamp Type
Surface Wood—Lamp
1½-inch Units
Cat. No. 457



Surface Type
Wood—Elec. Reset—Cat. No. 25-R
Metal—Elec. Reset—Cat. No. 25-RM



Surface Type
Wood—Golden Oak—Gravity
Cat. No. 372

When Electrical Reset Annunciators of the highest class are demanded order DeVEAU Grade "A." They are made for heavy duty service and have incurred general favor due to their positive, convenient and silent resetting feature. Very well finished, standard markings from 1 up. Special markings on order.

and Push Buttons



DeVeau Circle Push
Removable Weighted Felt-Covered
Base—Desk Type
Cat. No. 4-C



Elevator Push
Cat. No. 112



DeVeau Directory Push
Removable Weighted Felt-Covered Base—Inclined Desk Type
Cat. No. 2-A



Midget Push
Cat. No. 5-A

The DEVEAU Line of Push Buttons covers a wide variation of models and types covering Directory and Circle Type and Locking Directory Push Buttons. Highest grade materials and workmanship — standard markings and finishes.

Write for DeVeau Bulletin No. 117

The DEVEAU Bulletin No. 117 makes a most complete reference on Annunciators and Push Buttons — you need it.

A postal card or phone message will bring it. Get in touch with us today.

STANLEY & PATTERSON, INCORPORATED
GENERAL OFFICES AND FACTORY: 250 WEST ST., NEW YORK, U. S. A.

(3 BLOCKS ABOVE FRANKLIN ST.)
Cable Address: "Elecight," New York

DISTRICT SALES OFFICES:

BOSTON
Chas. R. Corcoran
12 Pearl St.

DETROIT
DeVeau-Bartling Co.
81 Peterboro St.

CHICAGO
Doherty-Hafner Co.
730 W. Monroe St.

LOS ANGELES
Clapp & LaMoree
310 E. 4th St.

SAN ANTONIO
Kemp Haythorne
383 So. Pinto St.

BUFFALO
Chas. K. Wyatt
310 Mutual Life Bldg.

BIRMINGHAM
W. H. Beaven
Jefferson Co. Bk. Bldg.

LOUISVILLE
Electrical Sales Co.
Kenyon Bldg.

SEATTLE
P. L. Headley
609 Seaboard Bldg.

PHILADELPHIA
Jas. A. Vaughan
Real Estate Trust Bldg.

DENVER
The Wesco Co., Inc.
1156 7th Street

HAVANA
Arnesto N. Rodriguez
415 Abreau Bldg.

SAN FRANCISCO
Clapp & LaMoree
171 2nd Street

PITTSBURGH
Parke & Jaques
305 7th Avenue

SALT LAKE CITY
Raymond Ackerman
Dooly Bldg.

Horseshoe Curve in the Alleghany Mountains. One of the scenic wonders of America.

Keeping the wheels turning with "U.S." Royal Portable Cord

A big mogul limps into the railroad repair shop with a part that needs welding. Portable tools and lights are brought up on the double-quick. No time to be lost here. The wheels *must* be kept turning.

And no time is lost, for in the larger shops "U. S." Royal Portable Cord is standard equipment.

"U. S." Royal Portable Cord is built to stay on the job, no matter how rough the work.

A tough, resilient rubber cover, instead of the ordinary fabric cover that wears and tears, accounts for its ability to resist abrasion and the deteriorating effect of water, oil, grease and dirt. The rubber cover affords perfect protection to the conductor and at the same time gives the necessary flexibility.

"U. S." Royal Portable Cord outwears four to five ordinary cords.

United States Rubber Company

1790 Broadway New York

Complete stocks carried in the following cities:

Atlanta	Columbus	New York	Seattle
Baltimore	Denver	Omaha	Salt Lake City
Boston	Detroit	Philadelphia	St. Louis
Buffalo	Indianapolis	Pittsburgh	Syracuse
Chicago	Minneapolis	Rochester	Toledo
Cleveland	New Orleans	San Francisco	

Trade Mark

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

The Electragist

(Trade Mark Reg. U. S. Pat. Office.)

FARQUHAR JOHNSON
Editor and Business Manager

The Official Journal Published Monthly
By the Association of Electragists—International.

IRVIN SHULSINGER, Advertising Director
Cleveland: H. W. Booth, 781 The Arcade

JAY S. TUTHILL
Associate Editor

Volume 23

APRIL, 1924

No. 6

TO OUR READERS

All matter for publication must be in the hands of the Editor by the 10th of the month preceding publication.

All changes in our mailing list should be received by us two weeks prior to date of publication of the issue with which the change is to take effect.

TO OUR ADVERTISERS

Changes in advertisements and all advertising copy should reach our office not later than the TENTH OF THE MONTH previous to the date of issue.

Table of Contents and Advertising Index Next to Last Page.

SUBSCRIPTION RATES

One Year, Domestic.....	\$2.00
Foreign Subscriptions, including Canada, per year.....	\$2.50
Single Copies.....	20 cents

Copyright, 1924, by Association of Electragists—International.

Entered as second-class matter September 1, 1919, at the Post Office at Utica, New York, under the act of March 3, 1879.

PUBLICATION OFFICE:

100 Liberty Street, Utica, N. Y.

EDITORIAL AND BUSINESS OFFICE:
15 West 37th Street, New York City

*Look for
the Duck*

SAYLOR ELECTRIC
AND MFG. CO.,
Wheeling, W. Va.

*Don't say
just "loom"*

Ask for SAYLORDUCT. You'll know it by the DUCK trademark. Live-wire Contractors are getting next to SAYLORDUCT. The easy fishing qualities help them to reduce their labor cost.

SAYLORDUCT



"A Photograph that Tells Its Own Story"

Tremendous New Market Opened to Apex Dealers by Our New **\$10.00 Trade-In Allowance**

Thirty-two sales in one week, thirty-two cleaners accepted by one dealer the same as \$10.00 cash in part payment for the new 1924 model APEX—thirty-two sales that he never could have made without this offer. AND HE HAS ONLY STARTED.

Double your market—bring customers to your store from distant neighborhoods—add to your list of prospective customers the names of hundreds of housekeepers right in your vicinity who have been waiting for the chance to trade their old worn-out cleaners in for a new one.

Any old electric cleaner of any make, regardless of its age or condition, accepted the same as cash toward a new APEX. Write at once for full particulars.

THE APEX ELECTRICAL MANUFACTURING CO.

1081 East 152nd Street, Cleveland, Ohio
Factories at Cleveland, Ohio, and Toronto, Ontario

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

USE ARROW PORCELAIN SOCKETS WITH THE ARRO-GRIP CAP



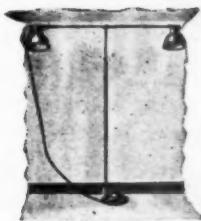
For INDUSTRIAL PENDENT WORK use Arrow Porcelain Sockets with the ARRO-GRIP feature which takes the strain off the binding posts and prevents shorts from frayed wires.

No. 962 ARRO-GRIP cap can be used with all types of Arrow Porcelain bodies. This is another reason why you should use Arrow Sockets. Send for new Arrow Catalog of complete line of wiring devices.

THE ARROW ELECTRIC COMPANY
HARTFORD, CONNECTICUT

ARROW
The complete line of Wiring Devices

X-Ray.
TRADE MARK



S-140 X-RAY
SCOOPETTE
DEMONSTRATOR

The unit consists of (2) S-200 Scoopettes with bodies of black nickel finish mounted on a 22 inch spacer tube. (Of same finish.)

It is wired with 6 feet of cord and plug.

Height is adjustable to fit any case from 25 to 40 inches high.

Bottom of adjustable rod is fitted with rubber flange to prevent scratching the floor of the show case.

Regular (G-18½) 15 or 25 watt lamps used.

WHAT A DIFFERENCE THEY MAKE! Dull and lifeless, a show case is a drag on any business. But equipped with X-Ray Scoopettes, it comes to life and breathes out its sales message.

With a Scoopette Demonstrator you can show a merchant what Scoopette Lighting will do. You can show him the step to take that will place him a notch higher in his selling methods.

We are offering the Scoopette Demonstrator to you along with the most attractive proposition that we know how to make. Use the coupon and find out about it!



Several years ago Augustus D. Curtis fostered an idea—the idea of X-RAY REFLECTORS.

Through his energy and resourcefulness this man today heads an institution devoted to the ideal of bettering illumination.

This institution, now known as Curtis Lighting, Inc., is a grouping of National X-Ray Reflector Co., X-Ray Reflector Co. of New York, Inc., and Luminaire Studios, Inc.

You will be interested in a new book recently issued, "Store Lighting with X-Ray Reflectors."



CURTIS
LIGHTING
Inc.,
1129 W. Jackson
Blvd., Chicago.

Gentlemen: Tell me all about your special Scoopette Demonstrator. I am interested.

Also send your book "Store Lighting with X-Ray Reflectors."

Curtis Lighting, Inc.

A Grouping of

NATIONAL X-RAY REFLECTOR CO. X-RAY REFLECTOR CO. OF NEW YORK INC.
LUMINAIRE STUDIOS INC.

31 W. 46th St. 1129 West Jackson Boulevard Pacific Finance Bldg.
New York Chicago Los Angeles

SPECIFY "KWIKON" FOR GOOD ROUGHING-IN MATERIALS



A Mark of Quality
which Identifies
Conduit Fittings and
Wiring Materials of
the better sort

**The LINE OF NO REGRETS**

KWIKON "No-Bolt" Studs
KWIKON Locknuts and Bushings
KWIKON Box Connectors
KWIKON Fixture Studs
KWIKON Tile Hangers
KWIKON "Endoutlets"
KWIKON Conduit Nipples
KWIKON Grounding Clamps
KWIKON Conduit Plugs
KWIKON Outlet Boxes and Covers
KWIKON Conduit Straps
KWIKON Service Entrance Fittings
KWIKON Cutout Material
KWIKON Conduit Hanging Materials
KWIKON Conduit Clamps
HERSH DUPLEX SIGNALS

Get Your Free Sample

S. R. Fralick & Company
19 S. Clinton St., Chicago, Ill.

We want a free sample of the "No-Bolt" stud.
Also send us your catalog and price list covering
KWIKON Conduit Fittings and Wiring
Devices of the better sort.

Name _____

Address _____

**Hang fixtures better
with "No-Bolts"!**

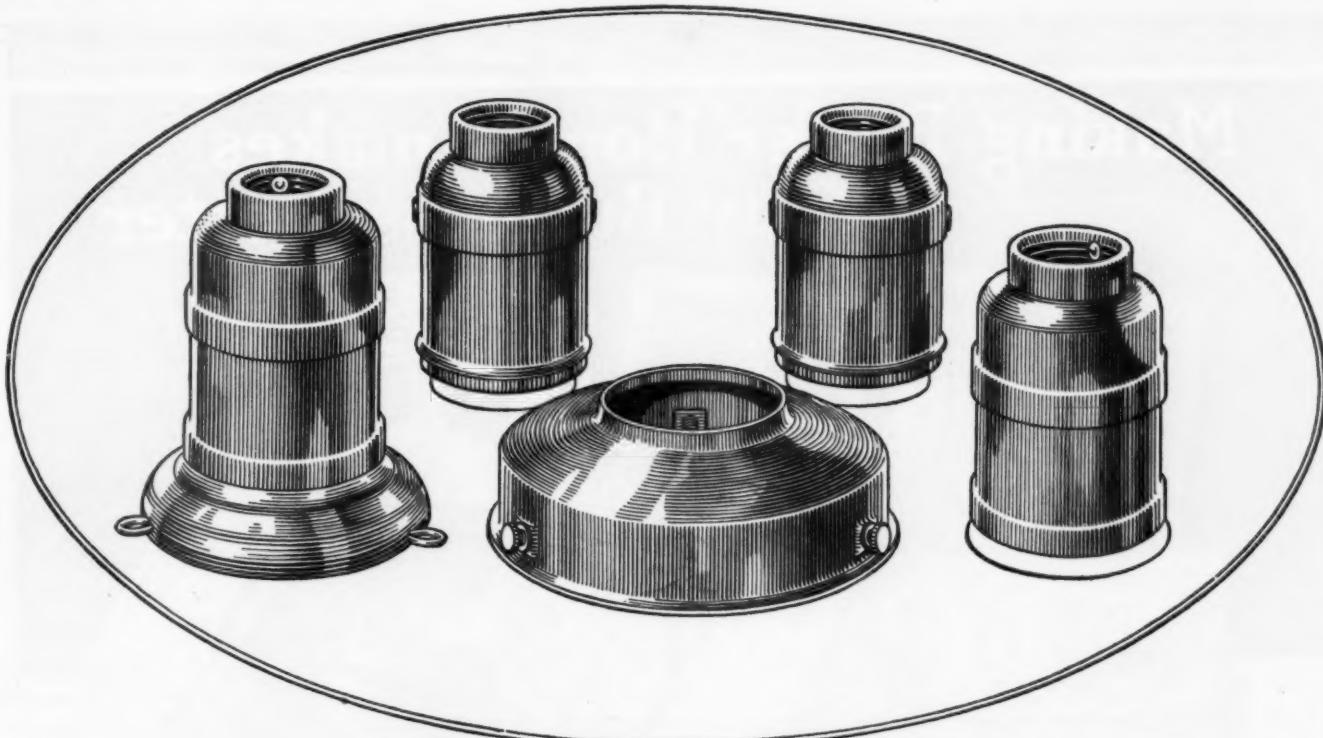
Yes Sir! You can hang fixtures better and quicker with KWIKON "No-Bolt" Fixture Studs because:

- 1 The broad supporting head of the "No-Bolt" Stud supports the stud and fixture.
- 2 The locknut holds the stud more rigid than a dozen small bolts possibly could. The box itself must give first.
- 3 Actual tests prove that but one-sixth of the installation time is required. A spin of the locknut with the finger and a quarter turn with the pliers makes the stud secure.
- 4 There are no fine threads to strip, no small bolts to turn, no tedious nuts to drop and lose.
- 5 Fixtures *can't* hang crooked when supported by Kwikon "No-Bolt" studs. Box will give before the "No-Bolt" Stud.

Reliable, time-saving "No-Bolt" studs cost no more than obsolete Hickey studs with their tricky, troublesome, time-killing, unreliable small bolts.

Specify KWIKON "No-Bolt" Studs on your next order

S. R. FRALICK & COMPANY
19 South Clinton Street • Chicago, Illinois



P&S Aluminum Sockets

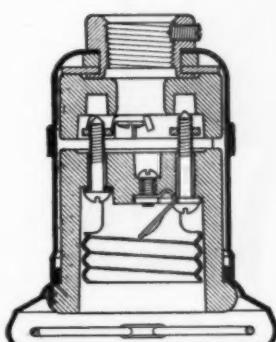
Petticoat Type Sockets

They are New. Use with or without shadeholder.

The Shadeholder nests into the Petticoat Shell.

Two heavy screws clamp the Body, Shadeholder, Shell and Cap together.

The combination is rugged, easy-to-wire and compact.



Socket with Shadeholder in Place

Resist Corrosion and Atmospheric Conditions

Manufacturers of Outdoor Illuminated Devices

Use Aluminum Sockets as a part of the device for inside or outside lighting. For Vending Machines, Advertising Novelties, Portable Tools.

Hand Portable Manufacturers

Use 486 and 487, Side Connected, also 486-B and 487-B, Front Connected Types.

The heavy Nipples are a solid part of the Shell.

These Sockets add practical durability to the Hand Portable.

Industrial Lighting Fixtures

Use Petticoat Type for outside lighting—a practical weatherproof job, with or without shadeholders.

Railroads and Packing Plants

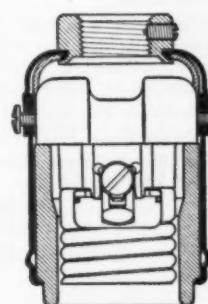
Use Petticoat and Bayonet Sockets for heavy duty jobs.

Bayonet Type Sockets

Bayonet Type Sockets with Side Terminals on the Body are popular with practical wiremen.

Bayonet slots are pitched to draw the shell and cap tight.

A Solid Socket for outside or inside work.



Socket Showing Side Terminals

If you want to see a Sample—tell your Jobber, or write us

Pass & Seymour, Inc. Solvay Station Syracuse, N. Y.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

Making Better Homes makes Your Business Better



Thousands of home builders

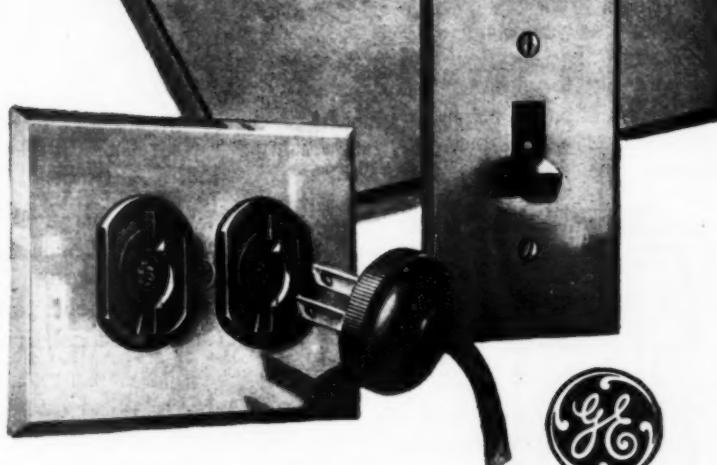
—and more thousands who wish to wire the old home—are eagerly reading these messages from General Electric, appearing monthly in popular magazines, telling about the better kind of house wiring.

From these people come thousands of requests for "The Home of a Hundred Comforts" the book which tells the complete story of electrical convenience.

This book is a mine of information. It prepares people to look for the best and latest methods in electrical wiring. It makes business for the dealer who can render qualified electrical service.

Tie-in for this profitable business with your window displays, mailings and newspaper advertising. Get the complete outfit of sales makers from your G-E Distributor.

*Merchandise Department
General Electric Company
Bridgeport, Connecticut*



The
Guarantee of Excellence
on Goods Electrical

MERCHANDISE DEPARTMENT

GENERAL ELECTRIC

48-47

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

The Electragist

*Official Journal of the
Association of Electragists—International*

FARQUHARSON JOHNSON
Editor

JAY S. TUTHILL
Associate Editor

TECHNICAL EDITORIAL ADVISORS

CODE
Hubert S. Wynkoop, M.E.
Member Electrical Committee N. F. P. A.

POWER
William J. Shore, E.E.
Contracting Electrical Engineer

INSTALLATION
Allan Coggeshall, E.E.
Vice President Hatzel & Buehler, Inc.

RADIO
J. Howard Pile
Distribution Counsellor

Volume 23

APRIL, 1924

No. 6

Don't Miss Reading These:

Relating to Radio. We all agree as to the future of radio—it can't be stopped—it will continue to advance and progress. To keep well informed on the subject, look through these pages monthly and learn how we visualize industry conditions for the Radio Engineer-Dealer.

Do It Electrically. The last installment of that unique comedy drama, novelized exclusively for our readers, is published this month. Look it up and read it, then you'll go back to the February issue and read it all over again. It's just that interesting—a story that will live as long as the contractor-dealer branch of the electrical industry lives.

Chats on the National Electrical Code. This monthly feature continues to grow in popularity. Read what Mr. Wynkoop says about overloading branch circuits—among other good things this month.

Why is a Contractor-Dealer?—might be the caption of the wordy debate published in this number. It makes mighty interesting reading, as it shows the feeling in different parts of the country on this momentous question, and all contractor-dealers will want to argue it for themselves as they read it.

Take This Issue Home With You and Read It

Published Monthly—Established in 1901

Publication Office: 100 Liberty St., Utica, N. Y. Editorial and Business Office: 15 W. 37th St., New York City

Address all Mail to Editorial and Business Office

Personal Views of the Editor

Attention is called to an article in another column of this issue, setting forth strenuous objections to the use of the words "or equal" in specifications. These words are the cause of strife and bickering throughout the construction industry. They should be thrown into the discard, along with other old foggy customs that a progressive industry should have long ago outgrown. "Debunk the building contracts", as Charles L. Eidritz says, and let us have specifications that specify.

* * *

Recently I heard an electragist complain of 5 and 10 cent store competition. How foolish it is for a reputable contractor-dealer to dignify such claptrap as competition! Thomas Henry Day, president of the Western New England Association of Electrical Inspectors, when commenting on a cheap fixture, recently said: "It's very much like the 5 and 10 cent store product, where the various parts are kept in a basket. The customer may select any number of parts and assemble them in the belief that he has a fixture of his own designing; or the clerk—usually a girl—will assemble them for the purchaser; but the result is a product, the parts of which are inadequately secured, thus making a potential hazard". I don't believe that such practices would seriously interfere with the business of an electragist. Eventually the customer will realize the error of his way and will patronize the electrical store where service and satisfaction are assured.

* * *

"Too busy to go to any kind of meetings", said an electrical contractor when asked to attend a local gathering the other day. Sure he is busy—but not making money. He is working alone, without counsel or advice, trying hard to make a living by the sweat of his brow.

Even to devote one evening a month to a local meeting of contractor-dealers

will give every attendant new ideas that are sure to bring returns; for as some fellow has said: "When you have an idea and I have an idea, and we exchange, then we both have two ideas". And as two heads are better than one, so two ideas are better than one.

"But", says Mr. Narrowmind, "I don't want these other guys to use my ideas". Why, bless your narrow mind, don't you realize that it's easier to deal with anybody that uses the same trade practices that you do? The curbstoner's tactics are wild and hazardous. You don't want to compete with him, and you shouldn't. But if he begins to develop into a fair competitor, then it's up to you to give him your ideas—also to get his ideas—and thus you both are more strongly fortified against dishonest, incompetent and unfair competition.

* * *

Of course you know the old story about the kicking mule. It is said that no mule can kick when he's pulling; when he kicks, he can't pull. Association members that kick, don't work; if they are workers, they won't kick. It requires the coöperation of all members to make a successful organization. The Association of Electragists is not a profit making enterprise. In the last analysis it operates in the interest of the public. Every worthy business organization must in the end serve the public. Their chief object is to uplift their trade or profession. Thus each individual member becomes more useful to the public. The Association represents the contractor-dealer branch of the electrical industry. It has the support of men of ideals from all sections of the United States and Canada—men who realize that there must of necessity be something more than mere dollar making in their business. They are workers—not kickers. And like the mule, they can't kick when they work.—F. J.

Do It Electrically—III

BY THOMAS F. CHANTLER

Final Insallment Here Presented of Play Written by S. E. D. Staff Member and Produced by Washington Electrical Cast at Last A. E. I. Convention

"I'll land that business even though it means licking Stover to do it," Carvel Blake assured himself as he set out to find Dixon and fulfill his promise to make Emery proud of his work in teaching him the fundamentals of salesmanship.

"Poor kid," muttered Emery, looking after the now thoroughly aroused Blake. "I shouldn't want to be in Stover's shoes if Blake loses that contract," he chuckled as he turned to the financial section of his cherished New York paper.

Dixon, however, was not so readily to be found. He was present at the picnic, Blake felt sure, but as he did not know him by sight he was compelled to depend upon others to direct him; and those whom he addressed were no better informed. "Of course! Why didn't I think of that?" he said to himself, when it had dawned upon him that finding Stover would undoubtedly lead to his discovering the elusive Dixon. So, much against his inclinations, he went about through the crowd asking for information regarding the whereabouts of the one man of all others that he least wished to see.

"Bet you don't want to find him half as much as Millie Burk does," confided a gossipy individual. "She's stewed; has a load she ought to make two trips to carry. And she's hunting Stover. If she finds him—oh boy! Sure am glad my wife keeps me travelin' the straight and narrow," he concluded smugly.

"Mr. Dixon. Mr. Dixon. Telegram for Mr. Dixon." Messenger boys habitually get their man, and Blake realized that he could not do better than follow this one until he had done so. Besides that was much pleasanter than seeking after Stover. He trailed the boy here and there until he had located Dixon, located him upon the very spot, a grove adjoining the picnic grounds, where he had left Emery an hour or more earlier and started out to find him. Stover was there too, together with Mickey Dugan and another contractor, Cohen by name, who was reputed to get his business by the very closest of figuring. The conference was about over, he observed, and he hastened forward to speak to Dixon, introducing

himself briefly and asking for an opportunity to figure on the work to be done.

"Go ahead," Dixon told him. "I'll hear you, but make it snappy. My time's limited," looking at his watch significantly.

He did not know what Dugan and Cohen had offered, nor how Dixon regarded their propositions. But Stover's truculent air of assurance and Dugan's wide smile acted to stimulate his determination to the bursting point; not since the day he rescued Mildred Everton had he experienced such an overwhelming impulse to do and dare. But determination that is translated into terms of mere energy is a factor of questionable value in effecting sales, and his very desire to throw all of himself into the work and make a very thorough job of it led him into a very ticklish position.

Wishing to base his presentation upon the savings to be effected through increased output, fewer accidents and less spoilage, as resulting through use of proper illumination, he began by asking Dixon some very searching questions concerning the number of men to be employed in the factory, the scale of wages to be paid, and other

such facts pertaining to the commercial aspects of the business. All good information for the lighting salesman to have of course, but Dixon, frankly puzzled by such an approach, put a stop to further questions by asking Blake what he was driving at. "I thought you were going to talk about the lighting equipment, but you sound to me more like an investigator for Dun or Bradstreet," he said somewhat petulantly.

"I'm trying to render you a service, Mr. Dixon," was all poor Blake could find words for.

"Mr. Dixon is here to discuss an electrical installation for his factory," Stover cut in icily. "He is not interested in your views upon economics and I'm sure that I am not," he added, glaring witheringly at the nonplussed electrician. Then he turned to Dixon, addressing him ingratiatingly. "I suggest, Mr. Dixon, that we have this man put his story in writing; we can read it at our leisure sometime."

Hardly waiting for the lawyer to finish, Blake hurried to address Dixon further, allowing him no chance to decide against him unheard. "I asked those questions to bring out the fact that a large part of your manufacturing costs will go for labor," he said.



After Business Hours His Efficient Bookkeeper, Dora Prentiss, Would Play the Part of a Prospect in Order to Accustom Blake to the Important Work of Demonstrating to Women—This Scene From the Westinghouse Lamp Company Picture Furnishes Just the Setting

"An electric lighting installation is of itself only a means to an end—to enable your help to do good work. Your men must have good light, and above all they must have it in the right place—on their work, *not* in their eyes. The operations in your plant will be many and varied, and each will call for a scheme of local lighting especially suited to the work at hand."

"Yes, yes," agreed the now interested Dixon. "Go on."

Needing no second invitation, Blake went on eagerly. Lighting was his hobby and he was better informed upon the subject than were any of his competitors. "If the lighting isn't correct, wastage and spoilage may run as high as twenty-seven percent, accidents will be many, and, well—no matter if you are the best production man in America, if the lighting isn't right the output won't be within twenty-five percent of par. I can prove it by more actual examples than you can find time to investigate in a month," he assured Dixon earnestly. "Don't you see," he hurried on, "the cost for the installation happens once and it's over. A hundred, five hundred, a thousand dollars one way or the other is as nothing in the long run—not if it means getting twenty-five percent more work out of three hundred high priced workers, it isn't," he added.

"Fine!" agreed Dixon, "If what you say is correct. But where's your proof?"

"Demonstration is the only proof worth a button," insisted Blake vigorously, sensing that he was making headway and forcing his advantage. "I'm ready whenever you are, Mr. Dixon," he urged. He had done his best; his conscience was clear upon that score; he waited for Dixon to speak.

Obviously impressed by Blake's straightforward presentation of facts which he as a business man had been quick to appreciate, Dixon intently studied the telegram that the boy had given him. Then he glanced at his watch. Dugan shuffled nervously, glancing admiringly at Blake. Stover was plainly disconcerted by the turn that events were taking and seemed not to know what to do or say; while Cohen stood by expectantly, his beady little black eyes watching all of them and waiting to see what happened next.

"All off for now, boys," announced Dixon decisively, making ready to leave. "Just received word that our machinery will be delayed a month at

least; so there's not the need for haste that I thought there would be. I'll return in two weeks; see me then, all of you. Can't spare another minute now," he called back over his shoulder as he rushed for a conveyance to take him to the train. But he did not run alone. Glancing slyly at the others, Cohen graphically demonstrated his instinct for short cuts and special advantages by hot footing after the speeding Dixon, much to the amusement of Dugan and Blake whose better sporting instincts forbade such tactics.

"Well, kin y'u beat that!" demanded Dugan, chuckling over the duck footed strides of the pursuing Cohen. "Runs like a clam pursuing its young. He's a regular go getter, ain't he?" he asked whimsically, turning to Blake cordially.

Blake nodded in amused agreement, his mind busily seeking a way to benefit by something Emery had expounded to him just a day or two before. "Never fight a competitor," he had told him. "Tend to your own race and put all your thoughts into getting ahead; then hire your competitor to work for you. That's the best way—best for business and best for you." He had much to gain and but little to lose, he told himself; and the idea of disrupting the Stover-Dugan combination did intrigue him tremendously.

"I'm going to the pavilion to attend to some temporary lighting that's needed for the dance tonight. Going that way?" he asked invitingly.

Dugan glanced appraisingly at the disconsolate Stover. He was smoking

nervously and seemed lost in his own thoughts—thoughts of clinching and holding to avoid a knockout, the expugnista decided. "Yep," he said, linking his arm in Blake's. "Let's go." Earlier in the day he had discovered Blake's assistant, Dora Prentiss, struggling with a heavy basket of food intended for one of the tables. His proffer of assistance had at first been spiritedly declined by the loyal little Dora on the grounds that she would accept no help from a curbstoner, but his ready wit earned him a place in her regard before he left her. However, she emphatically refused to continue the friendship unless he discontinued his price cutting tactics.

Carvel Blake lost little time broaching the subject that was uppermost in his mind, for his sense of having been victorious in his interview with Dixon fortified him with just the feeling of confidence that he needed to have in talking with the easy going curbstoner. "Dugan," he said, "I'm in this business to win and I'm going to win. But I've got to have a hard hitting, loyal organization behind me; and first of all I want a man who has guts and 'know how' and who will make the job of shop foreman something to be proud of. If you want to work with me—get that—with me, not for me—I'll pay you a fair salary and arrange for you to share in the profits. Are you on?" he demanded suddenly, suiting his tactics to those of the man he was dealing with.

"Count me in, right from the gong,"



Different Poses in Different Parts of the Store Were Tried Over and Over Again by Dora Until Carvel Felt Sure of His Ability to Sell Any Part of His Complete Electrical Service to One of the Fairer Sex—Scene From "Show 'Em How"

was Dugan's quick comeback. "And thanks for the chance. You know I'd about gone cold on this curbstonin' stuff anyway," he confided, thinking of Dora's vitriolic denouncement of his unbusinesslike manner of getting a living. "It will take a little while tomorrow mornin' to close up my—ahem!—affairs," he said jocularly, appreciating the joke on himself, "and then I'll be around to sign on," he assured Blake. "Here's my hand on it," he said, shaking hands vigorously. "See y'u tomorrow. Got to beat it now and put a stop to a certain party's calling me a curbstoner," he grinned, as he rushed away in search of Dora Prentiss.

The next two weeks went by with a roar for Blake and he worked early and late. Having Dugan to look after much of the shop work left him with a freer hand to attend to the selling and effect certain modest improvements in the appearance of the store; and he made every minute count. Washington Emery had returned to New York; and Mildred Everton was treating him almost as a stranger. He had not spoken with her since the day of the picnic. Fortunately for him, however, the problems incident to installing a modest display in his store for demonstrating the importance of proper lighting, and otherwise preparing for Dixon's return left him with no time or opportunity to incapacitate himself by worrying over his quarrel with Mildred. Work was his only solace and he took it in large doses.

On the day of Washington Emery's return to Tryville, Carvel Blake made arrangements to call at the station for him with his car and take him home by way of the store, so that he might induce his advisor to step in for a moment and see the new lighting display. He also cherished the hope that in taking Emery to his home after stopping at the store he might by good fortune come face to face with Mildred. He felt sure that if he could but see her and talk with her that he would be able to dispel her antagonism and restore their friendship upon a firm basis.

However, at the very last moment, just when he was leaving the store to go and meet Emery at the station, his carefully thought out plan of procedure was given an unexpected setback. He was waiting for his errand boy, Brewster Fenwick, to return and watch the store during his absence. Dora Prentiss was on her way to the bank, and he could not leave until one or the

other returned. In his impatience he opened the door to the street to look for them—and gazed into the muzzle of a swaying revolver.

"Show h'm t' me. Where is'h he? I'm gonna kill th' damn skunk. Where'sh Burch'd Stover? Bring h'm out; 's hidin' 'n here; I know. Can't fool Dan Burk; no damn lawyer's gonna trifl with his girl. She's lady, even if she does work in restr't. You know where he is, Carvel Blake? You'r' good fellow; tell me where he is'h."

Carvel Blake knew a crazy man when he saw one; and Dan Burk was that—drunk, mad and obsessed with a great lust for blood, for the blood of the man who had trifled with his daughter. Blake knew the gossip regarding Stover and the Burk girl, and he realized that the only way to avert the impending tragedy was to get Burk away somewhere until he sobered up. Having at best only a very cold sort of sympathy for Stover his interest was only slightly inspired by consideration for his welfare, but he did wish to prevent any happening calculated to add further to Mildred Everton's distress. Also, it was instinctive with him to oppose a wrong action, just as it was to rebel against injustice of any sort. So putting his own affairs aside and leaving the store to take care of itself, he persuaded the crazed man to accompany him in his car, by allowing him to believe that he was being taken where he would meet Stover.

Not knowing what next to do, he drove about aimlessly for a time while cogitating upon a plan for placing Burk in safe hands, keeping him pacified in the meantime by assuring him that he was looking for a man who knew all about the lawyer's whereabouts. "Hello, Dan, com' on and go fishing with us," came a hail from the car that was just passing them. Blake recognized the occupants as men who were bosom friends of Burk's and he beckoned them to stop. Leaving the now stupified Burk alone for a moment he ran to the other car and rapidly explained the situation to his friends, emphasizing that he must be cared for until he sobered up in order to prevent his committing a murder. They agreed to take him in charge and the transfer was quickly effected.

Glad to be rid of his responsibility and feeling that he had acted wisely, Blake hastened to the station, arriving just in time to intercept the capitalist as he was hailing a taxicab, and per-

suaded him to ride with him. Forbearing to say anything to Emery regarding Dan Burk's hunt for Stover, he utilized his opportunity to render a report of his activities and ask for criticism and counsel. Feeling well pleased with himself because of Emery's kind words of approval and encouragement, he hastened to usher him into the store.

Inquiring of Dora regarding any special happenings during his absence, he was let in for a gentle reprimand from Emery through the girl's loyal way of taking him to task for having left the store with no one in attendance. "Excuse me for saying so, Blake, but did you desert your store just to come to the station and meet me? This lighting display you spoke about must be a regular seventh wonder if you are that keen about having me see it."

Wishing to avoid having to explain the real reason for acting as he did, he was groping for a way out of the difficulty when the sudden opening of the door averted further embarrassment. "Hello, Dixon," exclaimed Emery, greeting the newcomer cordially. "Thought you were in Detroit."

"I was," agreed Dixon. "Just got here. The machinery for the Economy Manufacturing Company will come through on time after all; so the lighting equipment must be rushed through in jig time. Excuse me, won't you? I've got to hurry things," accepting Emery's ready nod of agreement and turning at once to Blake. "You told me," he said, "that you would be ready any time to prove the statements you made about our proposed lighting equipment. So far, I've seen all the other contractors except you and Dugan. The man to do that job must be selected today and start work at once. I'll hear you now if you are ready," he ended commandingly.

"I'm going to *show* you my story, Mr. Dixon, not *tell* it to you," Blake responded readily, "and I'll be ready for you in five minutes," he assured, hastening to the shop door to call Dugan and have him help with the display.

"Make it snappy," agreed Dixon. "Mr. Emery," he said, turning to the capitalist, "I would appreciate your opinion, if you can contrive to remain and hear what Blake has to say. I'm going to run across the street to the bank and get the president. Montgomery is a big stockholder in our company, you know, and I'd sort of like to have him in on this. Tell Blake I'll

be right back, will you, please?" he said to Dora, as he rushed to the door.

"Where did Mr. Dixon go?" demanded Blake returning from the shop followed by Dugan, who immediately busied himself with arranging the lighting display and making the necessary connections for illuminating the several neat demonstration pieces that Blake had secured from the manufacturers.

"He's just stepped over to the bank; the president, Gordon Montgomery, is interested in Dixon's company and will return with him to witness this lighting demonstration of yours," Emery told him eagerly. "They'll be here any minute. This is your chance, Blake. It's up to you now. Go the limit. Remember, I'm only a spectator and cannot help you," he cautioned. "But you'll win, you must. If you are even half as good a man as I give you credit with being, you'll get that business somehow—at a profit, mind you. Make it cost them. Nix on the give away stuff," he admonished in a whisper, as the door opened to admit Dixon and the president of the Tryville National Bank.

It was a big moment in the young electrician's career and Emery's biting words supplied just the needed spur. Again he experienced that surging inrush of determination to do and win at any cost; his greeting of the two men had the nonchalance of a seasoned pugilist being introduced to a friendly audience. And Dixon's humorous recognition of his shrewdness in having eliminated Dugan as a competitor acted to put him completely at his ease. "Not bad, Blake, not bad at all," he said, after the spontaneous Dugan had assured him that he was shop foreman of the Blake Electric Company. "You know Mr. Montgomery, of course," he hurried on, indicating the banker, who was chatting with Emery. "I want him in on this. We're ready when you are."

"Will you please be seated, gentlemen," he invited, indicating the chairs which Dugan had placed facing the four boxes containing the demonstrating equipment. "Gentlemen," he said engagingly, when the three men had settled into their chairs, "I told Mr. Dixon, when I solicited the business of the Economy Manufacturing Company, that supplying the workers with proper illumination was an investment that quickly would pay for itself. I mean that, gentlemen, and can prove it," he said earnestly, with the obvious conviction of one who thoroughly understands his subject. "Proper illumination pays for itself through less spoilage, fewer accidents and increased production, and what I propose showing you now is to the end of proving these things," he supplemented, making a sign to Dugan.

Skillfully he directed their attention to the first display, a device consisting of a lettered cylinder which was revolving at a constant speed, but which, due to an alternating increase and decrease in the volume of illumination, appeared to be revolving more rapidly at one time than another. By adroit questioning he drew from them the admission that they were able to see the lettering clearly only when the cylinder was revolving slowly. Then he confounded them and registered a strong point in his own favor by inviting Dixon to inspect the cylinder closely and state whether or not its speed varied.

"The joke's on us, gentlemen," Dixon informed the others. "The speed of the cylinder is constant. Guess it must be the light that goes up and down." And then Blake emphasized his point by proving to them that the volume of illumination that they found not sufficient to make the lettering legible was of greater intensity, if anything, than the illumination provided by the existing lighting equipment in the company's buildings.

Following up his advantage promptly and talking with an unconsciousness of self that made his earnestness doubly effective, Blake ran through the remaining display pieces rapidly, emphasizing each point definitely as it was made and building up his argument in terms carefully chosen to express their point of view as the users. Thanks to the display pieces he was easily able to demonstrate the importance of regulating light and shade correctly, the part which light plays in both speed and clarity of vision, the importance of choosing the proper color for walls and ceiling, as well as a host of lesser arguments supporting those main points. And as he went on, Washington Emery's tense anxiety for the success of his pupil's efforts disappeared; his smile grew expansive; he smoked contemplatively instead of puffing.

"Now, gentlemen," Blake concluded, "you have seen how important it is for the employes of the Economy Manufacturing Company that they have their work correctly illuminated. Only so can you be sure of maximum produc-

tion, minimum spoilage and the greatest safeguard against accidents. The Blake Electric Company can be depended upon to give you whatever lighting equipment you specify—and at a fair price. What are your specifications, gentlemen?" he asked encouragingly.

"Have you someone here who can take dictation?" asked Dixon, after a moment's whispered conversation with Montgomery, who had nodded vigorously in reply to his question.

"I'll do it, Mr. Dixon," assured the eager Dora, responding to Dugan's vigorous nudge and encouraging wink. She came forward with pad and pencil and soon was back at her machine pounding out an order to the superintendent of the Economy Manufacturing Company to allow Carvel Blake the run of the plant and give him whatever information he required in order to draft plans for a complete scheme of lighting for the entire works. "There you are, Blake," smiled Dixon, attaching his signature to the order and handing it to him. "We're sold to you; go to it. If the job turns out as I expect it will, I may ask you to run up to Detroit and supervise some improvements in the lighting of that plant too. I'm leaving for Detroit tonight; have your plans ready for me when I return. Expect me within three days at the latest. Coming, Mr. Montgomery?" he asked in his bustling way. "Want to have a talk with you before I leave, you know."

"Just a minute," Montgomery called after him as he prepared to follow. Then he turned to Blake. "Young man," he said, "I'm not at all satisfied with the way our bank is lighted. Drop in and see me the first time you're passing; I think perhaps we'll have you make some improvements," he invited, waving a friendly hand at Emery as he followed Dixon to the door.

A telephone call engaged Blake momentarily, and when he turned away from the instrument intending to thank Emery again and from the very bottom of his heart for his great kindness in having taught him the secret of successful salesmanship, he discovered his preceptor deep in a whispered conversation with Mildred Everton. She had entered while he was telephoning, and from her evident agitation he realized that something of moment had occurred. So as not to embarrass her by appearing to be waiting to address her uncle, he turned to speak to Dora Prentiss. But she was just following Dugan into the shop and he refrained from

calling her back. He feasted his eyes again on the cherished bit of paper that Dixon had given him, carefully standing with his back turned to the others.

"Oh, please don't," he heard Mildred say. "Certainly, I must," Emery replied. "Blake," he called, "have you heard about Burchard Stover, about the Burk girl, too?"

"The news is all over town, sir," he replied, hoping to avoid a discussion of the subject before Mildred. But Emery demanded to be told just what he knew; so he related briefly what had happened, skipping over his part in the affair very lightly.

"Well, Stover has skipped town, and the Burk girl tried to commit suicide by jumping into the river, but they fished her out just in the nick of time," Emery said briefly. He gestured resignedly. "And there you are."

Being uncertain of the effect of these lurid happenings upon Mildred, Blake hesitated to comment for fear of saying something that would add further to her distress. While he hesitated the unexpected arrival of his father extricated him from his difficulty. Whatever shrewd thoughts were going on in Washington Emery's head, his expression betrayed nothing. But his sudden, masterly action furnished an excellent cue. "The very man I want to see, Blake," he cried jovially, hobbling to the door and intercepting the old farmer almost before he had entered. "I have all the data regarding that brick making machinery in my bag. It's in your son's car; let's go and get it," he invited, urging him none too gently in the direction of out doors.

"Yes, yes," expostulated the old farmer, "but wait."

"Of course," agreed Emery. "Outside," nudging him vigorously.

Not for many a long day had Carvel Blake seen Mildred Everton, and the sudden shock of finding himself alone with her left him as self conscious as a school boy speaking his first piece. She was crying softly, dabbing her eyes with a diminutive bit of cambric, but keeping her face turned carefully away from him. "I am sorry you feel so badly about it all," he said sympathetically. "Perhaps your friend, Mr. Stover, will pitch in now and make something of himself after all. For your sake," he added, "I hope so."

"I wasn't even thinking of that man," she sobbed indignantly.

"But you are crying," he pointed out, still too blind to sense his great good fortune.

"You'd cry, too, Carvel Blake," she insisted with sudden vigor, "if you had acted in the horrid way I did the day of the picnic." She looked at him now with an expression in her eyes that aroused a wondrous hope in his heart. But such good luck could not be his, he told himself resignedly. Hardly realizing what he was doing, he stepped closer and held out Dixon's order for her to see. "Look," he said.

She studied the letter intently, her tears drying up and a happy smile dispelling the last trace of sorrow. "That's splendid!" she exclaimed heartily, holding out her hand. "I congratulate you. But, then, I always knew you could do it electrically," she insisted, seemingly quite unaware that Blake was still holding her hand.

They stood thus for only Cupid knows how long. Gently he raised her hand to his lips in an old fashioned sort of way that betokened the high quality of his regard for her most conclusively. "You'll never know how much you have meant to me," he said frankly, humbly.

"No," she agreed, "I suppose not—unless you tell me."

Scarcely believing his ears, he drew her to him gently, reverently. She nestled against his shoulder, stealing an arm around his neck. "I love you better than my life," he told her, "and I'll think myself the luckiest fellow in all this world, if you can find it in your heart to love me."

"You silly boy, of course I do," she whispered. "My life is yours; you saved it, you know. But I give you my love, all of it, forever and ever and ever," she said, giving him her lips.

Specify the Materials

Manufacturer Makes Suggestions on Debunking the Customary Specifications

Specifications and contracts are receiving considerable attention at the present time in building circles. Architects and engineers, as well as general and subcontractors realize that a new form for such documents is desirable, but old customs are difficult to change.

Charles L. Eidlitz in his talk on "Debunking the Building Contract", as published in these columns last month, aroused the interest of all branches of the construction industry, and it is now being widely discussed.

A particular phase of this subject was taken up some time ago by the Michigan Architect and Engineer. This refers to the use of the words "or equal" in many specifications. It is claimed that this phrase is a constant source of abuse and complaint on the part of architects, engineers, owners, contractors, and manufacturers.

In commenting on the article in question, a leading manufacturer of high quality materials recently told the writer that his materials are seldom used when "or equal" is noted in specifications. He avers that his company actually sells the architect on the superior quality of his product, but that the contractor is permitted to use an inferior material, which he may believe is as good as that specified, without objection because of the "or equal" term.

What this manufacturer would like to

see in all specifications is the following suggested clause:

"The contractor or bidder is required to give a basic bid on all materials, products, and apparatus of the qualities and makes specified, and in addition to the basic bid the contractor is further requested to give alternate prices on other makes, which will in his opinion conform to the specifications, stating the additions or deductions involved in the furnishing of these alternate makes and specifying the makes on which these alternates are based. Where no alternates are given in the bids, the makes specified must be furnished and installed."

This clause the manufacturer considers just and fair in every way. As he says, before the job is actually let the question of more or less high grade material is positively decided upon and settled. Then with the words "or equal" in specifications it is necessary to continually pass on other materials submitted in order to determine which ones are supposed to be "equal."

It is known that those who have adopted the practice of specifying the materials, find that it saves time and annoyance, and leads to more even bidding. Anything that will bring about more concise and complete specifications is desirable in the construction industry and should be welcomed by all.

The Future of Radio as a Business

Reports and records make it possible to forecast conditions. By closely studying reports extending over a period of years, life insurance companies have been able to forecast in an uncanny manner just how many people will be alive out of a thousand living at the present time for the next ten, twenty, thirty or fifty years. This does not mean that the companies can take a single individual and tell how long he will live, but taking any large group, there is a regular unfailing death rate on which the companies base their premiums.

Roger W. Babson is a student of the records of business. He is well known as an economist and so deeply has he studied business conditions that he generally makes a very accurate forecast. Mr. Babson lately has been delving into the radio business, and using as a basis the figures of 1923 he says that the American people will spend about \$350,000,000 for radio equipment during 1924.

That is a lot of money for an industry that has been going for such a short time. Babson further predicts that there will be expenditures something about like this:

Vacuum tubes	\$ 50,000,000
Radio sets and parts	\$250,000,000
Batteries	\$ 45,000,000
Sundries	50,000,000

Here is a part of what Mr. Babson recently said to the head of one of the largest manufacturers of radio equipment in the country:

It is interesting to see how the radio industry compares in dollars and cents with other large industries. Available figures on sporting goods, cameras, etc., show a value of about one hundred and eighty-five million

dollars annually. Sales of radio equipment are running nearly twice as large as all kinds of sporting goods.

Radio has passed through the fad stage and has become a utility. It has rightly achieved its proper permanent status among the important industries of the country.

A great deal has been said about the instability of the radio business. It was said that there were so many fly by night manufacturers and that dealers changed so fast that nobody could keep track of them. This is a natural condition to find in a new industry and it is a condition that fortunately is rapidly bettering itself. Just as children will get the measles and the chicken pox, so a new industry will attract a lot of people who should not be in it. The automotive industry has passed through a similar condition, where at the worst, the dealer turnover was nearly 40 percent a year. The electrical industry went through it, and so did all other modern industries.

The volume of radio business is growing rapidly and safely. More reliable manufacturers are replacing the other kind every day. Advertising is carrying goodwill, and business reputations are being made with reputable merchandise.

And there is a sifting out all the time of undesirable dealer connections so that today you find radio goods being represented by the highest class merchants in every town and the back door and side door artists disappearing.

A further stabilizing agent is the jobber. More and more is the radio industry working through and with the jobber. And less and less is there a tendency for manufacturers to advertise to the public for agents, "No experience necessary."

Selling Storage Batteries For Radio Use

There Are Profits to be Had if the Fine Points Are Known—A Few Other Things Should Go With Every Sale, Also at a Profit

One of the pieces of equipment upon which the electragist depends for a substantial profit is the storage battery. Within the last few months there has developed a distinct demand for storage B batteries as well as the storage A batteries.

The first storage batteries used on radio work were really adaptations of automobile batteries with certain changes in the design of the plates to make them more adaptable to the demands of radio work as well as reducing the cost. The automobile battery has to be of the thin plate type on account of the fact that when the engine starter is used there is a momentary current draw of upwards of 200 amperes. It takes a thin plate battery with considerable plate area and a great number of plates to withstand a heavy draw of this kind without buckling the plates.

But in radio work there is never a heavy current draw of this kind excepting in the case of an accidental short circuit across the terminals of the battery.

The automobile battery, even with the changed plate design was not satisfactory for radio work. In the automobile the battery is out of sight and its appearance does not count for so much. While rugged, the automobile battery cannot be said to be a thing of beauty and its terminals are not adapted to radio use.

The radio battery is therefore made in slightly different proportions, has a handsomer case, and is provided with screw type terminals which allow easy hooking up and disconnecting when it is necessary to remove the battery for charging or other purposes.

First Ones for Radio Work Were 6 Volt

The first storage batteries for radio work were of the 6 volt rating because the first vacuum tubes were of this voltage. Later the dry cell tubes took the country by storm and the storage battery manufacturers made up batteries in $1\frac{1}{2}$ volt ratings to operate with tubes of the WD11 and WD12 types. Storage batteries are also made in $3\frac{1}{2}$ volt ratings for tubes requiring this voltage. The batteries so far mentioned are all for the tube filament

work. The B batteries are of course made in multiple voltages of $2\frac{1}{2}$ the same as in the case of the dry B batteries.

Storage batteries represent a very much higher first cost than dry cells, but if the radio user is operating his set to any considerable extent, the use of storage batteries will well repay him for the extra expense involved.

The one drawback to the use of storage batteries is the necessity for having them charged at frequent intervals. The storage battery also requires care and attention, and without this its life will be short. Prospective purchasers of storage battery equipment often bring up these objections and many times sales fall down because the salesman is not able to answer them to the satisfaction of the prospect. In other cases the salesman makes claims for storage batteries that are not true, and when the battery does not perform as well as the salesman said it would, the owner becomes dissatisfied with his purchase and hinders future sales.

A storage battery has what is known as an ampere hour capacity. This may be 50, 60, 90, 100 or higher. The capacity of the battery depends upon the area of the plates in each cell. Each cell of a storage battery will give $1\frac{1}{2}$ volts when the battery is in a moderate state of charge. Some rough estimates of the capacity of the battery can therefore be made from the size of the battery. Its voltage can be told by counting the vent holes, each of which represents one cell and then multiplying by $2\frac{1}{2}$. A three cell battery will therefore give a voltage of $7\frac{1}{2}$ when fully charged. As the charge decreases, the voltage drops until when the battery is quite low the voltage will be only $5\frac{1}{4}$ or $1\frac{3}{4}$ volts per cell.

Kind Depends on Service to Be Rendered

The kind of a battery to sell a customer depends upon the service the battery is expected to give. If the customer has a single tube set with a tube drawing 1 ampere, then a 60 ampere hour battery will give approximately 60 hours of service before it will need recharging. Assuming that

the customer uses the set for an average of 2 hours per night for a week, that means 14 ampere hours per week and the battery would last 4 weeks before it needed recharging. These figures are rough because it must be remembered that tubes vary and one rated to draw 1 ampere may possibly draw 1.25 amperes or it may only draw .8 amperes which would affect the life of the charge proportionately. Another thing that has to be taken into consideration is that the storage battery has a slow internal discharge of its own and if a fully charged battery were left without any work to do for a couple of months, it would then be found to be over half discharged. So that the man in the above case with the one tube set should not expect to get more than 2 to 3 weeks service from the battery before it needs recharging.

To take another case, suppose a man has a 7 tube set with the detector tube drawing 1 ampere and the amplifying tubes drawing .25 amperes each. This would be a total drain of $2\frac{1}{2}$ amperes, so that with a 60 ampere hour battery the owner would get a theoretical life of 12 days and the actual life would be much less than this. So a larger battery should be sold for this service.

When a battery is fully charged and its voltage is high, the filaments will burn bright enough for good reception with only a slight turn of the rheostat, consequently the current draw is very slight. As the battery becomes discharged, however, the voltage drops and it is necessary to turn the rheostat handle on further, making a more rapid draw. In the beginning therefore the draw is light and uniform, but toward the end of the charge, the draw is quite heavy.

Maintenance Is Important

Another thing in estimating the capacity of the battery for radio use is the maintenance of the battery. A storage battery is not like a pail of water that you can take some of the water out, leave it for a couple of months, and then take some more out. A storage battery will have a long life only if kept fully charged. When the battery is fully charged the plates will keep without damage almost indefinite-

ly. When the battery is discharged or even partly discharged, the plates start to sulphate or turn white. This white coating makes it difficult to charge the battery, and in order to dissolve this sulphate it is necessary to charge the battery for a very long time at a very low rate. Eventually excessive sulphation causes the active material in the plates to harden and drop out of the grids.

It takes anywhere from 6 to 36 hours to charge an A battery, depending upon its capacity and the condition of the plates. To avoid the inconvenience of the radio owner being unable to operate his set while the battery is being charged, the charging station furnishes a rental battery for which a charge of 25 cents a day is made.

Radio set owners can keep their batteries in much better condition and can avoid the possibility of the battery giving out in the midst of some interesting reception by providing themselves with some form of charging apparatus. In this way the battery can be given a little charge every night or every other night and the wiring can be so arranged that the simple throwing of a double throw double pole switch will throw the battery on charge or throw it so the set can be used. Of course it is understood that the battery cannot be charged at the same time it is being used. The reason for this is that the charging voltage must be much higher than the battery voltage in order to force the current through and this higher voltage would burn out the filaments in the tubes.

There are a great number of battery chargers on the market and the electragist who sells storage batteries should be prepared to sell battery chargers also.

No battery purchaser should ever be allowed to start away without buying a hydrometer for testing the condition of the battery. Some of the owners of more pretentious sets will also be interested in purchasing ammeters and voltmeters for testing the batteries and for observing the rate of current draw. These instruments are a most valuable addition to any set and they tell the operator exactly what is going on in his power plant.

WHO carries your Liability Insurance? The National saves you money on this.

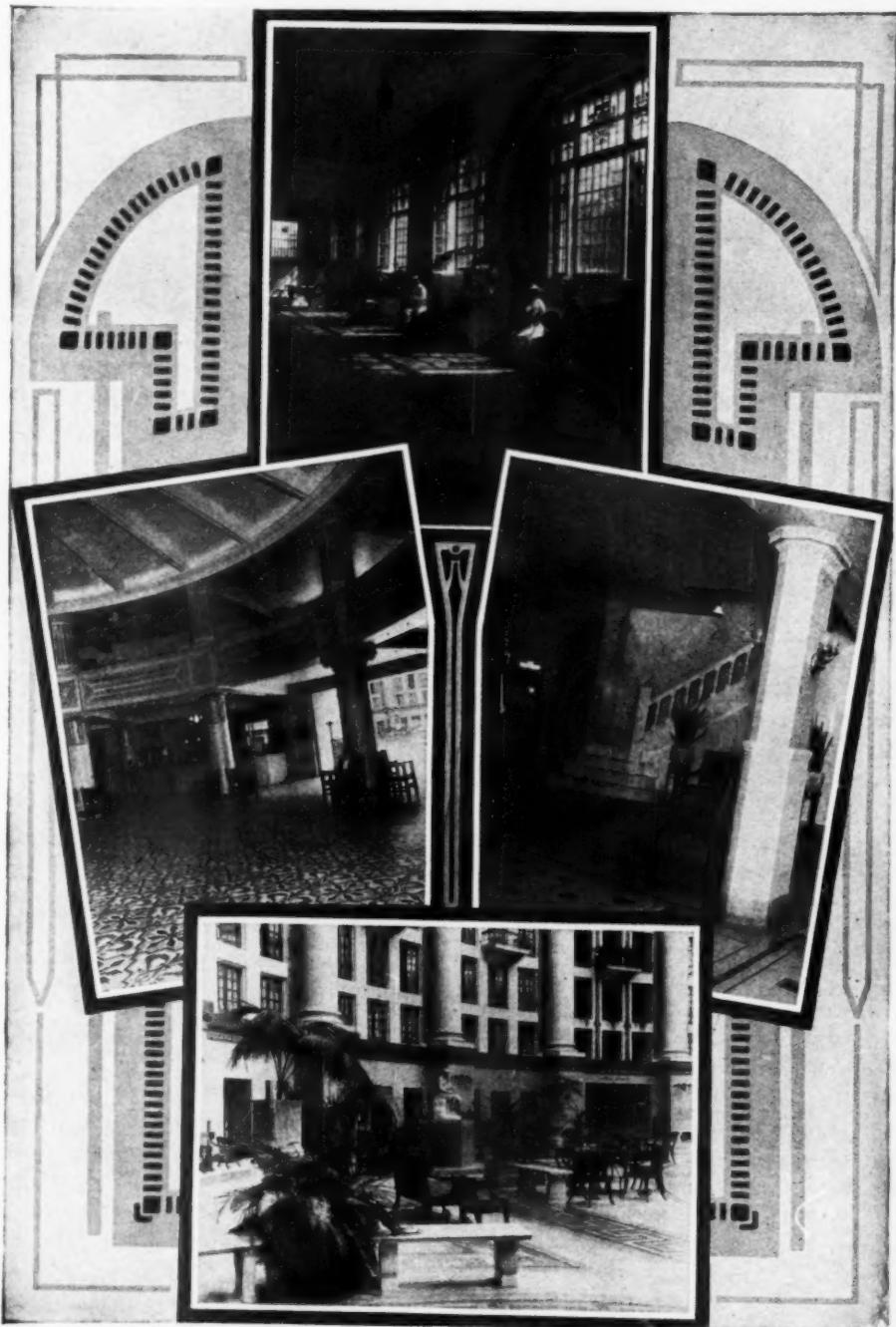
Boost the Annual A. E. I. Convention

Electragists Should Take Advantage of Every Opportunity to Urge Attendance—Use the Slogan

Begin to make your plans now, Electragists, to attend your great International convention next October. It is not a bit too early. Perhaps you will want a vacation about that time; your folks should be taken on a trip during those glorious fall days; or something else of a dozen and one things may come up to be done just at this season of the year. Whatever the situation, see if it cannot be worked out in conjunction with your attending

the twenty fourth annual convention of the Association of Electragists.

Here's the slogan: "Business and Pleasure Happily Combined". This is made possible because of the selection of a resort instead of a hotel in a big city for the scene of the convention activities. Briefly the high points are: Place—West Baden Springs, Indiana; Time—week of September 29; and Who Invited—everybody in the contractor-dealer branch of the electrical industry—and the ladies.



Interior Views of Headquarters Hotel, West Baden Springs, Indiana

Contractor or Contractor-Dealer?

Should an electrical contractor make a business of selling electrical goods? Can he make money at it? Does he know the ins and outs of store arrangement, stock turnover, overhead expenses, window trims—all fundamental factors in retailing—well enough to justify his going into that end of the business? In short, should he be an electrical contractor-dealer?

This is admittedly a mooted question. But it must be decided before the contracting and dealing branch of the electrical industry can function in the best interests of the public and the business as a whole. And from the standpoint of the consumer and the other branches in the industry of which it is a component part a business that is unethical and uneconomical can not long endure. That is well known.

If the combined business of electrical contracting and dealing is uneconomical and unethical, is it, as many point out, because there is little if any money in retailing under the prevailing system of competition and prices, and because the electrical contractor as a rule is a mechanic and not a salesman? Or is this question no different from that faced in any other trade where similar channels of distribution exist, and that the answer to it is largely dependent upon the man himself in the business?

This problem at present is receiving more attention than ever before from

all branches of the electrical industry—from manufacturers—jobbers—central stations—dealers—contractors. Perhaps the best way to get at the facts and bring about a solution is through open forum discussions in which the respective interests are permitted to take part and each lay his problem before the other in a way that is clear and clean cut. It would seem that this method is as feasible as any.

Looking to this end the A. E. I. made signal advancement by holding a debate on the subject at its last annual convention in Washington, D. C. This debate, printed on the following pages, received international recognition and favorable comment from many quarters has been provoked. In January a similar debate was held at the annual meeting of the Wisconsin State Association of Electrical Contractors and Dealers.

Keep the ball rolling! Who will be the next organization to announce such an event on its convention program? Now that it is squarely before the industry this great problem should be faced in all fairness and a conclusion arrived at, which can be taken as a common sense guide by the concern already established as well as by the man just starting in the business.

What is the answer? Is it contained in the pages which follow? The contractor wants to know. And so does the contractor-dealer.

Debate on Results of Combined Business of Contracting and Merchandising

This Feature of Last Association of Electragists' Convention Provoked Weighty Arguments Pro and Con

[NOTE:—As in the case of the debate published in the January number on the subject of Super Standard Installations, which was also held during the last annual convention, both sides of this important question are here given, as presented affirmatively by M. H. Johnson of Utica, New York, and Negatively by Louis Kalischer of Brooklyn, and the floor discussions as well are appended. The subject of this debate was: "Resolved, That the Best Results Are Obtained by a Combined Contracting and Merchandising Business."—The Editor.]

M. H. JOHNSON, AFFIRMATIVE: Electragy is on the border between science and business. It suffers from the ills of both branches of endeavor without having all the compensations which belong to the unhampered pursuit of either the elusive dollar or the torch of advancing science. Those engaged in older business pursuit look askance upon our line of business for several reasons. It is not covered by all the principles which apply to long established commercial lines; its operation is not so readily understood, and it is a fact that the financial prizes are very small and scarce as compared with those available in more established and less technical lines.

Strictly professional people whose activating motive is found in the pursuit of knowledge or some idealistic goal, are cold toward our occupation because the apparent reason for engaging in it is purely mercenary.

Despite these facts and in spite too of its extraordinarily rapid growth, there is no doubt but what our business is very much overmanned, with much to be desired as to the quality of the crew. The money to be made at it is not the motive behind most of the people in our line. They are attracted to it by other reasons among which the most prominent are: the newness of the business, the mystery surrounding it, and perhaps somewhat to the glamour which attaches to being identified with electricity. Pioneering is interesting to everyone in this country and that may influence some to engage in this—the pioneer of business enterprises. These various causes have brought into the field men who are not influenced by exactly the same motives as underlie the more completely developed occupations. This in turn accounts for the

fact that many enthusiasts in this work are not well founded in business principles.

Business Principles Vital

Now while technical knowledge and acquaintance with the stock in trade of our business and the uses to which it is put are essential to carrying it on, it is even more essential here than in the older lines that sound business principles should be evoked and strictly followed in the pursuit and development of this work. It will perhaps be ap-

business, none of the materials could be used by the public until so assembled and placed in service by someone having technical knowledge and skill:

This condition has gradually changed during the past quarter century until now a great variety of electrical devices are made complete and self contained ready for use by the average public. So another branch of the business has developed in the sales of such electrical things as the buyer can put in service unassisted and this is referred to as supply or merchandising business. Custom has perhaps begun to regard the electrical supply business as wholesale, and electrical merchandising as retail, but the meaning of the names and the articles handled are essentially the same in both cases.

Analyzing the Facts

The picture of this business starting with material only useful when assembled and installed by experts, gradually furnishing more and more perfectly developed apparatus until now much of it can be used as it is by the public, practically answers the initial question affirmatively.

The concern which decides to sell electrical materials only when it is to erect and place them, is undertaking a narrow specialty. Specialists are justified only when they give better and more economical results.

Only in large centers where development is very active, can enough construction work be had to make a worthwhile business and unless the work is in large amount, the cost of doing it alone is greater than when combined with supply business, because the same stock in trade equipment and organization can to some extent be used for both lines, thus reducing expense and investment.

In individual cases marked success is reached with construction work alone but they represent but a small percentage of those in the industry, and are strictly specialists. These electrical contractors show good judgment in not attempting to enter the merchandising field when able to obtain a satisfactory volume of business. There are also concerns conducting electric stores with some success who could not take up



M. H. Johnson

parent from the statement above that the high rate of business mortality among us can be accounted for without making any assumption of a mysterious source. It is also equally evident that the means of avoiding the catastrophes which so frequently overtake our people are neither difficult to find nor to apply. In fact the all essential answer to most of these problems may be closely clustered around the hackneyed and homely statement—Apply Common Sense.

The business of electragy comes in two main sub divisions. That known as contracting or construction work was first developed and recognized as including all those sales of combined labor and material in which the merchandise is placed in service for the purchaser. In the early beginning of the

construction work without courting disaster.

These instances, however, only show up the fact that this is a technical and somewhat complicated business. Thorough training, good intelligence, and hard work are needed for success. When these factors exist in a business that covers the wider field of construction and supply business combined, its success will be greater.

Keep Out of Some Lines

It may often bring better results to keep out of some part of each of the lines, so the detail and volume of the business will be in accord with the facilities and capital available. Doubtless some electrastists have not met with success in radio. Some can well refuse power transmission work. Not all should try to sell lighting fixtures. To deal in farm lighting plants takes special facilities. But in the main the business which includes wiring can to advantage sell wiring material and various appliances to substantially the same customers with more satisfaction and less lost motion all around than when the two lines must be handled by different concerns.

Some facts should be carefully considered by all who plan extending this field of business. An intelligent plan closely followed is the most important. Some first hand knowledge of the new apparatus is essential. A gradual extension is more apt to succeed than sudden and radical change of a successful business. So far as possible, extensions should be made by selling the kinds of merchandise already carried to new customers and selling regular customers new items of merchandise. The effect needed to sell new lines of goods to new customers is much greater and extensions of this kind should be undertaken with care and caution.

General observations show that the great majority of successful concerns have combined these lines, and changing conditions are tending to give the combined business increasing advantages. The pressure to install convenience outlets and provide for more and more extensive use of household and industrial devices in itself is day by day making the combined business better and better.

LOUIS KALISCHER, NEGATIVE: I am essentially an electrical contractor. Let us get that settled first. The question before us is whether the business of an electrical contractor can be enhanced

by the addition of merchandising; or whether the merchandising business can be enhanced because of its connection with an electrical contracting business.

Now we are to assume naturally that either line is a separate and distinct business, and if we are going to combine and have this wedding we want to know whether both parties are properly equipped and suitable, physically, financially, and otherwise. There are a good many phases and angles to this subject.

This being a debate, I presume we must first give attention to what the



Louis Kalischer

speaker who opened the debate said about the merchandising side of the business. He said that we must be altruistic—the baby can't walk, and we are going to carry it—or words to that effect. I don't agree with that view of the proposition. I don't agree that it is necessary to change the old customs of good business.

He speaks about good business—it is good business to make a profit on what you do. I don't know whether any of you have any private sources of income that you want to inject into this phase of the business, but if you have of course that is your lookout. But as a teacher, and as a man who is going to advise other men to do things, I want to say to you I feel way down in my heart that fundamentally good business is the business that returns a fair and legitimate profit.

Now I have no quarrel with the merchandise or with the appliances themselves. I agree with Mr. Johnson that

it doesn't require a technical man or woman to use these appliances. The public knows how to use them.

It might be of interest to you to know that in 1920 I wrote something along this same line, and while these are not my words, I am going to quote a man who does know about this proposition. He says, "Upon the electrical dealer devolves the important duty of placing in homes and workshops the labor saving and comfort bringing devices produced by the manufacturers."

Nobody but Bill Goodwin himself said that, and there is no quarrel with that whatever. I believe that. I believed that so much that I put up a building and installed every labor saving device that I knew of from soup to nuts, and I hired every man who ever claimed he knew anything about merchandising electrical equipment and appliances.

Now I am a contractor, and I was favorably situated. I knew perhaps—I won't say half the people in my town, but I knew more people in my town than the fellow in the average small town in the United States, knows.

Well, we put out these appliances and then the purchasers began calling up, and I had to stand behind them. They thought I was the inventor, and they just had to perform. I had to look after them, despite the fact that there was only twenty-five or thirty percent discount on those things.

In that paper that I wrote in 1920, I said, among other things, this: The distributor and jobber is the natural link between the manufacturer and the public, and they are perhaps in the most dangerous position, because they have not to the fullest extent fitted themselves by organization and otherwise to render fully this service."

A Central Station Man's View

Mr. Gilchrist spoke yesterday about the jobbers falling down. He said that the jobber handling merchandise is a joke, and the electrical contractor going into the business is another joke.

I said this in 1920 and Mr. Gilchrist said it yesterday: "It is absurd for the distributor or jobber to exact twenty percent or more for the services they render. If they are not sufficiently organized to handle this business economically they must correct it or be eliminated, and the manufacturer must be prepared to take up the link in the chain."

Isn't it a fact that the manufacturer is selling direct to the public, right

here in Washington? And in the city of Brooklyn they are doing the same thing.

All that the contractor wanted was a fair opportunity to function and get a fair return for the efforts put into the business. If he could break even he was willing to do that and he is willing to do that today. But the cards are stacked against him and it is impossible for the contractor, if he wants to stay in business, to merchandise electrical appliances on the setup that we have.

Now let me call your attention to a few things Mr. Gilchrist said. He said that the sale of electrical appliances by the contractor-dealer is a joke; that he cannot sell merchandise and live; that merchandising doesn't appeal to the contractor of standing. Mr. Collins of Chicago said that they have no control of the business. They are under an association composed of such men as you and I and the average contractor doesn't know anything about. They know how to organize in Chicago; and they know how to work together.

Mr. Saylor of Philadelphia says that he sells eleven thousand dollars worth of repair business, and doesn't make a nickel on it, and he renders very good service.

Of course if your contracting business is such that you can absorb that additional burden, hop to it; but if you are advising a man to follow proper, legitimate lines you can't from the bottom of your heart say that it is the right thing to do.

Get Proper Conception of Business

There are small cities that are fine

for this business—no question about it. I was talking to a man last night and he said to me, "I think merchandising is a good proposition." I said, "Fine! Does it pay your rent?" And he said, "Well, I don't know; I have only been in it three months." I said, "How much is your rent?" He replied, "Thirty-one dollars a month!" Good heavens, how can a man like that talk about merchandising?

When I was in the merchandising game there were one hundred and sixty odd washing machines manufactured, and they told me that I had to take some of those machines, or they would go over to the department store with them. They said, "The electrical contractor must distribute these machines; he is the link between the public and the manufacturer." But I said, "Yes, but I can't handle a hundred and sixty washing machines of different makes. The first crack out of the box they want to know which is the best, and I am stumped."

What was the result? One of the concerns opened up right across the street from me. They said I don't know how to demonstrate the machines. What do they think about the contractor—that he is a Miracle Man? So we had a meeting and I called in every man who was responsible for the sale of merchandise. We had the big boys there, and I said, "Here is this gang over here playing a funeral march for the contractors. Are they going to get away with it. You people have got to tell us how we are to merchandise at a profit." And there wasn't a man there who could demonstrate to a reason-

able man that it was a business, and I raised the red flag and said, "If you don't stop you are going to bust every electrical contractor who dabbles in merchandising."

Discussion from the Floor

THE PRESIDENT: This matter is now open for general discussion. Those who wish to discuss this question will do so in the order in which they are recognized by the chair.

Does anybody wish to discuss this question on the affirmative side?

MR. JOSEPH A. FOWLER, Memphis: Mr. President, I agree with both of them, so I will take the affirmative side in order to disagree with Louis, for a moment anyway. There is much to be said on behalf of the affirmative, as well as the negative side of this question.

I think both of these men are right, looking at it from their point of view, and thinking of it in the terms of the cities in which they live, and in which the business they operate is located.

MR. JOHNSON: Mr. Johnson is interested in the merchandising business from the standpoint of a city of a hundred thousand inhabitants, while Mr. Kalischer made his great experiment in a city in which there are millions of people.

MR. JOHNSON: Mr. Johnson's store in a town like Utica would be an outstanding example in merchandising. You never could find Louis' store in Brooklyn, even though it was a wonderful exhibition of the theory of Bill Goodwin.

I don't believe that you can make a success of the merchandising business in a city like Brooklyn, or New York, or Chicago. But I do believe that in order to make the right sort of success in an electrical contracting business, you have got to have a merchandising store in a city say like Memphis.

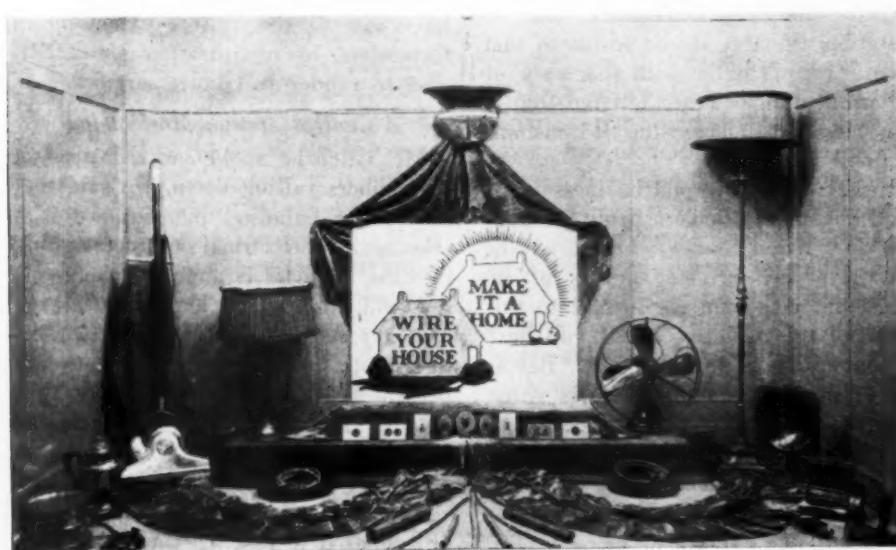
A merchandising store in a small town or the average American city gives you the contact that it is so necessary for you to have with the public. It is the greatest advertising asset you can have. To prove it you only need to look around about you and let your memory go back for ten or fifteen years and think of the men who started in business along about that time and did not go into the merchandising business, and those who did—and what do you find? You find that the merchandisers are the largest and most influential contractors in their communities. The merchandising game helped them—not to make any money, for I think we all agree that we can't make money in merchandising—but it helped them to make money in their contracting business.

I have been in the game for fifteen years, and I have found that I haven't made a profit in the merchandising end of my business, except as it has brought me profitable electrical contracting business.

Just for a moment may I say that this thought has come to me in thinking about why we don't make money in merchandising. Now we are not all of us rotten business men. It isn't altogether true that there is no electrical contractor who doesn't know the essentials of merchandising or who cannot learn them. So that this is not the gauge of our failure or success.

But I do believe in the first place that electrical merchandise costs too much money. Not altogether to the ultimate consumer, but it costs too much money to manufacture, because there is too much overhead in the manufacture of that sort of stuff.

Take for instance the electrical range. Is there any reason why such a range should cost three times as much as a gas stove made by the same company? Study the cost of all



An Appeal, Educational in Nature, Which Affords a Tieup Between Your Appliances and Your Contracting Service—Arranged by the Merchandise Department of the General Electric Company

the appliances that the electrical contractor-dealer is supposed to merchandise.

In conclusion may I reaffirm the statement that I have already made—that the contractor in a small town, in spite of the burden of the loss that faces him, cannot afford to be out of the merchandising business. The contractor in a city like New York hasn't any business in the merchandising game at all. (Applause).

THE PRESIDENT: Who wishes to speak on the negative side?

MR. N. L. WALKER, Raleigh: Mr. President, Ladies and Gentlemen: I am on the negative side of this question. I don't think that the contractor-dealer should be in the merchandising business. One reason is that we are in the merchandising business only because, as Mr. Fowler brought out, it is a good puller for our other business.

Any merchandiser will tell you that each article sold should stand on its own feet. Merchandising with us at present doesn't stand on its own feet, and I haven't heard any man who has defended it state that it does. There are two reasons why I say that the contractor-dealer should not be in the merchandising business. One is that the manufacturer who makes the stuff is against you; and the other is that the central station for whom it is sold is against you. They won't admit it of course.

A typewriter manufacturer makes a machine which from all the information I can get costs about fifteen dollars and sixty cents to make. It is sold for a hundred dollars. A vacuum cleaner, by the time a few of them are brought back and sold over again, will cost up to fifty percent of its value, to sell it. Where is the allowance of fifty percent for selling it? The manufacturer puts a price on that machine for resale and he puts a price on it with the dealer. Can you see any margin in selling that machine?

A man told me not long ago that at a certain resort hotel the proprietor sent to a lot of typewriter manufacturers a letter stating that he was going to buy some typewriters. He got five or six salesmen down and kept them two or three days and got their board bills, and then announced that he couldn't decide which one he was going to take, and he finally announced that he would just repair his old one. Those fellows thought they were up against it. But they don't know what we are up against when we have these washing machines come back and cleaners returned to us all the time. Their typewriters could be sold just as they were, while on returned washing machines and vacuum cleaners there was a loss of pretty near fifty percent of their value.

The central stations in the majority of cases can live on what they are getting from their light and power sales, and regardless of the fact that we work for them, they will sell this stuff without looking after our interests in any way.

As an illustration of what the central station could do, take the example of one of the big oil companies which puts out with the dealers a machine for metering their gasoline. They will give that man a machine through which to measure his gas. That is just an idea of what the central station could do for the merchandiser, but they don't do it. At the present time the manufacturer and the central station work against us. So that I don't see any real field for the merchandiser. (Applause).

THE PRESIDENT: We will now hear again from the affirmative side. This discussion is open to anyone, whether he is an electragist or not.

MR. GEO. T. BARROWS, Pittsburgh: Mr. President, Ladies and Gentlemen: In the beginning of my business I started in as a

small contractor, doing sublet work for the central stations. The first several years I made a little money, and when things came pretty good in 1919 and 1920, I made quite a respectable earning. My idea was that to get anywhere in a big way you had to open shops in different communities, establish a dependable store in which to sell merchandise, and take care of repairs and so forth.

It was a fine thing and worked out well. Our contracting dropped off gradually, but our appliance business grew, and we opened up three stores. One establishment was in a place where there are sixty to seventy thousand inhabitants and the central station operates a store there, and there are two other reputable stores. I found that it was impossible to get a man who would take the same interest that I did in the store, either in the merchandising or the contracting end, and so I went up there, where we were paying as high as three hundred and fifty dollars a month rent, the store being on the main street, where thousands of people passed daily and nightly. But we couldn't seem to get them in, although we had a very attractive place and a demonstrator in the window two or three times a week. Well in order to get that merchandise across we had to go out and sell it from house to house, and as Mr. Gilchrist said yesterday it cost us twenty percent to get it across. Our discount on most of the stuff that was sold at that time was thirty-three and a third percent, with an additional five percent off if we sold over—I think it was twenty thousand dollars net, on a particular machine, a year.

Now I agree with both sides of this story, but I am taking the affirmative because I believe that by closing these outside stores and bringing that stock and business into one store in northside Pittsburgh, combining those businesses and splitting the departments up between individuals as far as we can, we are going to help our retail store business to such an extent that we are going to get through and make some money.

I started in the game in 1911, and I went up the hill and down again, and I am now on the level where I think we will have a chance.

But there is just one thing that we have all got to get into our noodles, and the thing that brought me to this convention was the name of this organization. I have been to two or three other conventions, and if this name Electragist is worth anything and our Code of Ethics is worth anything, it doesn't make any difference whether we are contractors or contractor-dealers, if we stick to the principles implied by these standards of

business practice as we all should, and as we are supposed to, we will get through. As for myself I propose from now on to stick to them.

The reason I take the affirmative on this subject is that I am not a big contractor. I don't do any big construction work. I run an open shop. That is one reason why I am in the merchandising game. I wouldn't advise the man who is running a big construction business, like Louis Kalischer, to get into the merchandising game. His contact he said was good, but I find that most of the business that we get is from strangers, and not from our friends. Although I belong to a good many clubs and the like, the business that I get from my friends connected with those organizations is not a drop in the bucket. I don't solicit Chamber of Commerce or Rotary Club members, but I go out to the strangers and the foreigners in the Pittsburgh district, and that is where I get my living. I go out into the byways and highways, and pick up the men and women who want service, and are willing to pay for it.

And we get our prices. Our prices for wiring are as high as the highest, and our prices on appliances are standard—without any cutting that we know of. Nobody can come in to us and say, "Mr. Smith bought his appliance for less than we paid for ours," or anything like that. We can take him to the books and show him that it was sold to Mr. Smith for the same amount of money that he paid.

To my mind, if we stick to our business and live up to the Code as we have it written, we will get along in the electrical merchandising and contracting business. (Applause).

THE PRESIDENT: Do you desire to discuss this matter further?

MR. WHEELER, Rochester: Mr. President: This is not taking any side, but Mr. Kalischer spoke of a condition which was more or less general, brought about by the war.

A lot of the big industrial plants in our town found it necessary to reduce salaries, and in order to ameliorate that condition as much as possible they in some cases opened up stores where their employees could purchase at wholesale. In most cases, however, they gave their employees orders on concerns for their goods, and they picked on the electrical industry more than any other.

That brought about a condition which we analyzed after the large retail business of the holidays was over, and we found in one case one large industrial plant had sent employees in to the extent of two hundred and eighty-one, with orders for anything from a



How Many Manufactured Products in the World Are Made From Start to Finish Without the Use of Electricity in Some Form? Very Few It Would Seem From This Window Trim of the Wisconsin Power & Light Co., Berlin Office—A Good Display Thought

curling iron to a reading lamp and a washing machine, and being a company order those goods were necessarily billed to the company at wholesale because they were large purchasers in their business. That of course reduced our gross profit in the retail store, to twenty-four percent whereas it had been right around forty percent before this condition came about so extensively.

We had the courage to take the bull by the horns as soon as that study was complete, and our sales manager and myself went before the Purchasing Agents' Club and showed them some figures. We maintain a very expensive store in an expensive location, and it could not go on under those conditions, and we proved it to those men, with the result that shortly after that meeting we issued a bulletin that we could not give a discount to anybody on any goods, unless it was for maintenance purposes or for resale by these industrial plants, and that has been adhered to in Rochester ever since. None of those employees now expect a discount, and while it looked to me like a case of either going out of the retail business because we couldn't live under the conditions, or taking a year to overcome these conditions, it only took a month or two, with the result that our retail business shows a growth of thirty-nine and a half percent in volume all due to this condition of absolutely refusing to recognize an order from any industrial plant, unless it was for their needs for maintenance, or for resales in their business. (Applause).

THE PRESIDENT: Does anyone else wish to discuss this question?

MR. R. W. KECK, Allentown, Pa.: Mr. President, I believe the same as Mr. Fowler, that nobody in the electrical industry, a contractor or a contractor-dealer, should attempt to go into the merchandising business if his volume is beyond seventy-five or a hundred thousand dollars or if he employs more than eight men in his organization. Because if he does he can't give the service, the personal contact to the merchandising line of his business, that is required.

There is no question at all but that you can make some money in merchandising, if your business is not too large for you to give the proper attention to the merchandising part of it.

I hear it every day—that there is nobody making any money in the appliance game. There must be a reason for that. In my estimation eighty percent of the merchandise sold by these contractor-dealers is not sold properly. I think that is the nigger in the wood pile. If the article is demonstrated and sold properly the very expensive service charges that we hear about will not happen.

There are occasions, however, that no matter how you explain the article, how diplomatically you demonstrate that article, you would have been better off if you hadn't sold it to that particular customer at all.

There is money to be made in the appliance business, but perhaps not as easily as in my locality. In the first place a first class all around electrician ninety times out of a hundred will not make a business man, and before you can sell appliances at a profit you must know the rudiments and the ethics of business.

If you are located within a day or two of your distributor or jobbing house you must make money if you buy property in the appliance field. For instance take the American Beauty iron—if you buy six you get thirty percent off and if you buy less than six you get twenty-five percent off. How many of you fellows buy three American Beauty irons and take your twenty-five percent discount? Very few. If you bought three four times you would make a hundred percent on your original investment. That applies to all the appliance field.

The reason a lot of you fellows don't make any money in my estimation is because you don't buy properly, and you don't sell properly. Your telephone rings and a woman says that she has got trouble with an appliance that she has, and you give the matter your personal attention. When you arrive at the lady's house, you say, "What is the trouble, Mrs. Brown?" "Well, I don't know. The motor won't run and the lights won't burn." You go down and unscrew the plug and put a fuse in, and Mrs. Brown says, "Oh, if I had known that, I would have done it myself. That's fine." And you say, "Oh, that is all right. Next time, call me up." Don't you think she will tell her neighbors about that? (Laughter and applause).

I want to leave a thought with you on the time payment proposition. I make my leases ten month leases, and charge a twelve months' carrying charge. Why? Because just as soon as the ten months are up, if they haven't paid up to date, I have sixty days to dun them, or threaten them, if necessary. (Laughter and applause).

MR. A. L. COPE, Alliance, Ohio: Mr. President, after seventeen years' experience in a town of twenty-five thousand inhabitants, and with the lighting company out with four solicitors at a time, and paying two hundred dollars a month rent, I will say that I would rather give up today the contracting business, than I would the sales end of my business.

MR. WM. L. GOODWIN, New York City: The affirmative. Being one of those who is largely responsible for this and other discussions having taken place during the last four or five years, and since this meeting has developed into a personal experience meeting to a large extent, I have got to cite a few personal experiences also.

In the final analysis the structure of electrical retailing, be it contracting or merchandising, is going to be determined by the public understanding of service, and the public is going to decide this question without respect to the industry; and with all due deference to the opinion of the judges who are to decide this discussion this morning, I want to say that what has been discussed here this morning does not begin to get at the vitals of this question.

We have got to look at it for a long time, and we must build a structure—an electrical structure—which will some day command the support of reputable, responsible business men, and which will represent the electrical industry in the public estimation as it should be represented.

Now for the past several years I have had many fundamental conditions to deal with, and the immediate problem is most difficult.

There never will be a time when we can prescribe any system of retailing and contracting, that will suit everybody in the business, or every community in the country.

There are men with certain personalities, as was brought out here yesterday, who will be better contractors than they will be merchandisers, and vice versa. That will always be so. Every community doesn't afford an opportunity for every man who has an ambition to open up a department store. But there is money in the department store business, for those who know how to run it, and there is money to be made for the electragist in the merchandising business, for those who know how to run it.

But let me call your attention to this fundamental fact: There is no such thing as a man devoting himself exclusively to electrical contracting in the sense that we understand that term. We all know that a contract is a written document which prescribes what shall or shall not be done on a given job. The contractor is a merchandiser. Much of the trouble today, while attributed to the central station, is really caused by the contractor. The greatest cut price artist in the business today is the contractor who persists in conducting a supplementary merchandising business at ruinous prices—the contractor who cuts prices in order to obtain the initial installation, and then takes certain merchandising business at prices which make it impossible for his brother contractor to exist.

There is more price cutting going on in the business today—and I know whereof I speak—by the contractors, than there is by the central stations. Let us build a structure that will enable men in the future to get into this business. I wouldn't advise any man to go into the contracting business without he can make money out of it. If you haven't the ability and you don't know the game you are bound to fail. The contractors fail much more rapidly than the merchandisers, because the risk is greater.

Yesterday I talked to a contractor who is one of the largest, if not the largest contractor in the United States, and he said to me, "I have got the best business that I have ever had, and I am making money, because I haven't taken any contracts in New York City." He had to go out to the rest of the country to make a profit. I say that those who are building for the future will give attention to the combined service, because that is where the public is going to look. Success is bound to come to you if you know how to do it.

In my opinion the entire setup in the electrical business is already tending toward a more favorable opportunity for the electrical



If You Have a Narrow Window This Arrangement of Lighting Units—by the Merchandising Department of the General Electric Company—Will Get Attention on Account of the Universal Appeal

contractors who have the ability to handle the business.

I know that a certain proposition is going to be put through very shortly whereby this question of discounting paper is going to be solved. The question of proper margins is being solved now. The question of proper relations between contractors and dealers through the formation of leagues and clubs is being solved. Everything points to the fact that those men who have the courage and the ability to avoid the losses and go along slowly, as they acquire knowledge, are the men who are going to have substantial institutions, which will continue to grow in the contracting business. (Applause).

MR. SAMUEL ADAMS CHASE, New York City: Mr. President, I desire to take the affirmative on this question. I sympathize deeply with our friend Louis Kalischer, a fellow townsmen, or with anyone who has had the cards stacked against him. But I want to call your attention to the fact that the cards were stacked against every contractor-dealer in the United States, by nearly every central station in the United States, previous to five or six years ago. But there has been an evolution going on. Look at the progress that has been made. I don't want to see the electrical contractor-dealer drive this merchandising to the nonelectrical stores.

Yesterday we had the pleasure of listening to a man who came from Chicago, the Chairman of the Merchandising Committee of the N. E. L. A., and here we have in the audience Mr. W. H. Atkins of Boston. Boston wasn't a hundred percent pure five or six years ago but it is today. They are working with the contractor-dealer and in connection with practically every central station in the United States.

Now our job is to get together and win those boys over, where the cards are stacked against us. They are not unresponsive. All we have to do is to prove our case. A place has been provided for the contractor-dealer which was not provided before. The central station and the jobber have provided that place.

You know I am your friend; all my writings have been favorable to the contractor-dealer for years and all my talks you know have been. But previous to five years ago most all of us were doing an unethical business; but now, with three or four exceptional cases, the Goodwin Plan is being followed.

As I say, it has been our fault more or less. The contractor-dealer has not attracted the public to his store. Mr. Goodwin and I walked around Washington last night—if you will pardon the reference—and we found that the poorest lighted windows and the poorest displays in the windows were those of the electrical stores. We went from one to the other of the stores outside of the electrical business, and found them all very well lighted—above the average that we have seen in the United States. Bill would say, "I know that next one is an electrical store." "Why?" I inquired. "Well, because it is so poorly lighted." And it was so.

Another thing—we haven't provided a place to sell these things—we contractor-dealers haven't provided a place to sell these appliances, and we haven't sold the electrical idea to the public. There is our big job. But there is evolution going on, and the situation is growing better and better every day.

THE PRESIDENT: In accordance with the usual procedure the negative side will sum up its case. Mr. Kalischer, you have five minutes.

MR. KALISCHER: I have some charts here that I will have to use in this talk. Here is your electrical contractor; here is your prime cost. According to Bill Goodwin this is your overhead here. This line here is the con-

tractor's selling price. That is a flexible line dependent on your cost and your overhead and your desire for profit. That line goes up or down according to those two factors.

Your selling price is fixed. You don't fix it. The manufacturer fixes it; the department store fixes it; the central station fixes it, and every time you go sliding up and down above or below that line you lose money. You know you do. That is the trouble with the merchandising business as against the contracting business, because in the one case you have a fixed selling price, and in the other case it is your ability to sell the job and your knowledge of the business that controls.

It was said here the other day, that you must love your business. You have got to love your business, but also you have got to know your business, and you have got to have something else in your business besides hot air. I made money in the merchandising business, but it was a collateral issue. My building is worth a hundred percent more today than it was when I put it up. Mr. Barrows makes money selling gas stoves. He closed up two stores.

I have never disagreed with Bill Goodwin before, but I am taking the other side of this issue today. How long does Sam Chase expect a contractor to live before he can cash in on this game? Frank Watts told us that last year three thousand electrical contractors went out of business, with an average loss of a thousand dollars each—three million dollars loss. Add to that their time and the profit that they deprived the legitimate contractors of, which is at least a thousand dollars per man more, make it six million dollars. Who is going to absorb that? The electrical contractor, gentlemen. I repeat, the electrical contractor is not a Miracle Man. The cards are stacked against us, and until the central stations do as they should do we will not get anywhere. It is of prime importance that the central stations have customers put on their lines. And that is just what the contractor-dealer does.

I agree with Mr. Fowler that in local districts you can make money in this business, but not on appliances alone—as a collateral issue, yes. I don't believe that the public has been educated up to the point where they can go and buy these appliances in the hardware or department store or the bootlegging shop, and then go to the electrical contractor and because he is in that business expect him to make repairs to those appliances free of charge simply because he loves the industry.

In closing, Mr. President, I want to say that there is nothing generic in making a profit. Every business must make a profit. (Applause).

THE PRESIDENT: Mr. Johnson will now close for the affirmative. I want to say to you that Mr. Johnson is the original Electragist. (Applause).

MR. JOHNSON: There are some things in connection with this debate that I would like particularly to observe, and that is there doesn't seem to be any argument produced as to why this business should be divided along the lines that we recognize as construction business and merchandising business. There have been many arguments brought up here as to why the business in itself should be limited, and I don't think anyone takes issue with that. There is no question but what every man should divide his business and do business along the lines that he has the best facilities for.

But I don't think any arguments have been produced here to indicate that a decision should be made along a particular line of construction and merchandising without the sale of labor. An argument has been advanced that appliances cannot be handled because there are so many kinds of appliances. One

of the main functions of the merchandising end of the business is for the proprietor to select the best appliances he can procure, and offer them to the public. It is very impracticable to carry in stock and offer for sale all of the different kinds of appliances that perform the same functions.

Then the question of selling appliances also divides itself into two classes—the class of business which sells from the floor of the merchandising establishment, and the class of business that is sold by solicitors in the field. Those two classes are quite distinct and separate businesses although they both come under the classification of merchandise. But a concern which might be well adapted to making a success in selling merchandise from the floor could not succeed in selling merchandise through solicitors in the field.

There is one thing, however, in this business which is a handicap to all of us and a serious one, and if we are to have a permanent result from this argument perhaps it may be achieved along this line, that we are all more or less working in the dark as to the quantity of merchandise that we have to sell.

If we had some fairly reliable figures showing in the first place what the producing facilities of the country were in washing machines, vacuum cleaners, toasters and all the other things that we are trying to sell, and what the consuming ability of those things is, and how large the possible field of distribution is, then we could avoid a great many errors that are now made.

If the Association of Electragists, in collaboration with the Society for Electrical Development, could by some means function so as to supply the industry with this information, I think it would do more to put the whole proposition on a moneymaking basis, and save money to the consuming public, and at the same time put us in the right light before the public, than anything else that is available for our consideration, at the present time. (Applause).

At a later session the judges, Earl E. Whitehorne, commercial editor, *Electrical World*; Frank E. Watts, then editor, *Electrical Record*; and Farquhar Johnson, editor, *The Electragist*, rendered their decision as follows: "In regard to the debate on the question as to whether electrical contracting and dealing should be a combined business, the judges wish to announce the decision for the affirmative. We are making no particular explanation of that decision, but it was our opinion that the affirmative clearly won in the presentation of arguments."

New Officers

At a recent meeting of the board of directors of Johns-Manville, Inc., the following officials were elected: T. F. Manville, chairman; H. E. Manville, president; L. R. Hoff, vice president and general manager; W. R. Seigle, vice president and general manager of factories and mines; J. E. Meek, vice president; J. W. Perry, vice president; J. S. Carroll, vice president; A. C. Hoyt, secretary treasurer; and T. F. Manville, assistant secretary treasurer.

New Kinks for the Radio Dealer

Late Developments in Equipment and Accessories Appeal to Enquiring Buyers

Reflex Receiving Sets

A line of receivers with loud speaker volume without extreme amplification is offered by the Reflex Mfg. & Sales Co., Inc., 644 West Forty-fourth Street, New York City. The company is making a policy of assigning exclusive territory with credit for all sales made in the territory.

Edison Low Voltage Cells

As a substitute for the dry cell, the Bartlett Factory Equipment Co., the Bourse, Philadelphia, is now marketing an Edison primary battery with voltage characteristics suitable for WD-11 and WD-12 tubes. The batteries are made in two sizes, 1,000 and 2,000 hours at 1/4 ampere discharge rate. The cells are said to have an average of three months' life after which they can be renewed by simply replacing the element and solution. The cells are not rechargeable but are renewable at slight cost.

Henley's Circuit Diagrams

A new book of circuit diagrams is being published by the Norman W. Henley Publishing Co., 2 West Forty-fifth street, New York City. The diagrams include all standard hook-ups and probably the largest number of various circuits published in one cover. The values of inductances, capacities and resistances are given in each case. The name of each element in the diagram is also given.

Automatic Blow Torch

A blow torch which is automatic in action, requiring no priming or pumping is being marketed by the Delaney, Heslin Products Corp., 1457 Broadway, New York City. The torch burns either wood or denatured alcohol and will burn for two hours. The flame is strong and needle pointed. It can be used for soldering, brazing and tempering small parts. It has no moving parts.

Variable Grid Leak

A variable high resistance unit designed for use in radio receivers and transmitters has been developed by the Temple Instrument Co., Camden, N. J. For mounting on the panel it is only necessary to drill one 3/8 in. hole in the panel. The unit is small and consists of a panel insulating disk behind

which is mounted the resistance unit. The unit is hermetically sealed to prevent moisture from entering and the shaft used to turn the disk is made of an insulating material said to eliminate body capacity. The binding posts are separated to take a standard grid condenser and lugs are provided for soldering. The resistance range is from 1/4 to 5 megohms.

Fansteel Battery Charger

A new battery charger for 6 volt batteries is a new type of rectifier for charging storage batteries from alternating current. It operates by certain properties of a new metal, Fansteel Balkite. It is said not to deteriorate through use, to be noiseless and to require only occasional filling with distilled water. The device is made by the Fansteel Products Co., Inc., North Chicago, Ill., and sells for \$18. The charger will charge a battery at a 3 ampere rate.

Todd B Battery

A rechargeable B battery with a capacity of 1250 milliamperes hours is made by the Todd Electric Co., Inc., 109 West Twenty-third Street, New York City. The latest type M is made in voltages of 100 and 140 at prices of \$21 and \$30 respectively. Switches are provided on the front panel for charge and discharge and terminals allow a variety of voltages to be used from 22 1/2 to the capacity of the battery.

Vertical B Battery

Where space is limited, the new vertical B battery made by the National Carbon Co., Inc., New York City, is a space saver. The battery has a base practically the same as the smallest size Eveready B battery but is about twice as high. It gives 22 1/2 volts and is fitted with Falmestock spring clip terminals. It is known as No. 764.

Liberty Transformers

A completely shielded audio frequency transformer is being marketed by the Liberty Transformer Co., Chicago, Ill. The shielded construction allows the transformers to be mounted close together to save space and shorten leads. The terminals are on a flat Bakelite top, easy to get at or to change. The prices are: ratio 3 1/2 to 1, \$4.50; 5 to 1, \$4.75; 9 to 1, \$4.75.

Roberts Storage B Battery

A rechargeable storage B battery with Edison elements is now being manufactured by the Roberts Storage B Battery Co., 1120 Myrtle Avenue, Brooklyn, N. Y. There are only three main terminals to connect and a double throw switch on the front panel provides for charging or discharging positions. A swing of the switch lever gives instant voltage changes on detector or amplifying tubes. It is made in four types. Type A is rated at 100 volts and has a variable detector from 16 to 22 volts, price \$20.50. Type B is also rated at 100 volts, has variable detector from 16 to 22 volts and variable voltage from 44 to 100 volts for amplifier, price \$23.50. Type C is rated at 140 volts, has variable detector from 16 to 22 volts, price \$26.50. Type D is rated at 140 volts, has variable detector from 16 to 22 volts and variable voltage from 44 to 140 volts for amplifier, price \$30.

Como Duplex Transformers

Transformers types I and O are being put out by the Como Apparatus Co., Inc., 446 Tremont Street, Boston, Mass., and specially recommended for the new Cockaday circuit and for push-pull amplification. The price is \$12.50 per pair.

Globe Audio Transformer

A new Type C audio transformer is being made by Robert F. Sharpe, 507 Fifth Avenue, New York City. The device is claimed to give volume without distortion and to be specially adapted to neutrodyne circuits.

Electrad B Batteries

A new B battery is being marketed by Electrad, Inc., 428 Broadway, New York City. The batteries are said to have a uniform high voltage, uniformity of discharge and low amperage.

B Battery Eliminator

A B battery eliminator for use with DC current is being made by the Radio Engineering Laboratories, New York City. The unit is 4x6x3 in. and may be plugged into any DC current socket. On the top panel are three binding posts, one the negative, one the detector positive, supplying 22 1/2 volts and the third for the amplifier positives and giving 100 volts. The cost for current is so little as to be negligible, only one cent per 100 hours operation. The unit has an air cooled container, is passed by the underwriters and is supplied with 5 ft. of cord.

A
on
25
City
dear
ver
tro
rad
me

A
pol
the
Fra
sin
tai
tra
and
nic
rul
are
ft.
ore
we

Co
Y.
ma
ea
me
op
te
so
tw
ph
dl

A
as
m
T
to
g
S
m

A
Y
p
n
e
T
q
t
d

X Laboratories Rheostat

A new type rheostat is being placed on the market by the X Laboratories, 25 West Forty-fifth Street, New York City. The control shaft and frame are dead to eliminate body capacity. The vernier and coarse adjustments are controlled by a single knob. Good heat radiation is provided, a Bakelite element mounting being provided. The total resistance is 20 ohms.

Repeater Radio Head Phones

A new type headphone with a single pole is being placed on the market by the Moss-Schury Mfg. Co., Inc., 2011 Franklin Street, Detroit, Mich. The single pole type is said to have certain advantages in the concentric attraction of the diaphragm. The resistance is 2,400 ohms and the case is of nickelized steel. The ear caps are hard rubber composition and the headbands are khaki covered piano wire. The 5 ft. black cords are provided with colored markers for polarity. The entire weight is 14 ounces.

New Pathe Loud Speaker

The Pathe Phonograph & Radio Corp., 20 Grand Avenue, Brooklyn, N. Y., has a new 1924 loud speaker with mahogany finish which sells for \$17.50 east of the Mississippi. The instrument is mounted on a pedestal, the operating mechanism being at the center of three arms which support the sound reflector. Communication between the mechanism and the diaphragm is by means of a slender needlelike arrangement.

Audiophone Baby Model

A Baby model has been added to the Audiophone line, this selling for \$12.50 as compared to \$22.50 for the Junior model and \$32.50 for the Senior model. This line is manufactured by the Bristol Co., Waterbury, Conn. The same goose neck and horn as are used in the Senior model are also used in the Baby model.

Model A Monodyne Amplifier

This amplifier made by the National Airphone Corp., 18 Hudson Street, New York City, is specially designed for amplification of music and voice. One or more stages will operate a loud speaker. The price without tube is \$8.50. The design includes a new audio frequency transformer and the construction is the same as the National Monodyne tube set. While specially designed to match the Monodyne receiver,

it can be used with any other receiver. WD12 and UV199 dry battery tubes are recommended for use with the apparatus.

Direct Reading Wave Meter

A direct reading wave meter for calibrating transmitting and receiving apparatus between 100 and 5000 meters is being marketed by the Radio Engineering Laboratories, 26 Thames Street, New York City. It can be used as a miniature transmitter to test receiving sets and is mounted in a walnut carrying case. The price, including battery is \$35. Each wave meter is tested with a meter calibrated by the Bureau of Standards.

Paragon Precision Condenser

By radically altering the outline of the plates, it has been possible to secure practically a straight line characteristic in the Paragon Precision Condenser made by the Adams-Morgan Co., Upper Montclair, N. J. A single rigid main bearing is used.

Amrad S Tube Rectifier

A rectifier for use in transmitting is now being marketed by the American Radio & Research Corp., Medford Hillside, Mass. This tube rectifier has no filament and is rated to carry 100 mils at 1000 volts with a life of 3000 hours.

Stevens Spintite Wrenches

Small socket wrenches with handles like screwdrivers are made by Stevens & Co., 375 Broadway, New York City. They are for speeding up assembly work and for getting easily at nuts in tight places. The hollow stem of the wrench goes down over long projecting screws and the hexagon socket gets a good grip on the nut. They are made in all sizes. A set of three popular sizes sells for \$1. Also made for phone jacks and in larger sizes, which sell for 65 cents each.

GR Type 268 Vario Coupler

A compact, rugged vario coupler with low losses and wide wave length range has been developed by the General Radio Co., Cambridge, Mass., to sell for \$3.50. The forms are Bakelite and the bearings tight and smooth running. The stator is provided with a center tap.

New York Radio Shows

The Hotel Pennsylvania, New York, was the scene of the First District Radio Show and Convention early in

March. A number of manufacturers of radio parts and equipment had exhibits and the gallery of the ball room housed exhibits of a number of radio clubs in the surrounding territory. In between times there were meetings, papers read by prominent radio authorities and several luncheons together with the annual dinner. The attendance was very good and visitors apparently were more conversant with the subject of radio than has been found at past shows.

New York may expect two more radio shows this fall if plans are carried through. One will be held at Grand Central Palace October 2 to 8 under the auspices of the American Radio Exposition, and the other will be at Madison Square Garden September 22 to 29 under the auspices of the company that recently held a similar show in Chicago.

Holds Radio Exhibit

The New York Edison Company held an exhibit of radio equipment at its main showrooms March 22 to 29. This was one of a number of specialized electrical shows held every year by the Edison Company, but it is the first time that radio has had a place on the program. Leading manufacturers and dealers were invited to exhibit and the display was quite comprehensive and attractive.

Funds for Broadcasting

Clarence H. Mackay, Felix M. Warburg, Frederic A. Juilliard and A. D. Wilt, Jr., have constituted themselves a committee to be known as the Radio Music Fund Committee, with the object of raising a fund to be known as the Radio Music Fund, for the purpose of broadcasting radio music concerts by the world's greatest artists.

The committee is inviting contributions to the Radio Music Fund from \$1 upward. The fund will be held by the Central Union Trust Company of New York, subject to the order of the committee, and will be expended under the direction of the committee. If in the opinion of the committee the contributions received are not sufficient to warrant going ahead with the plan the committee will notify the bank to that effect, and all contributions will be returned as far as possible to the contributors.

How to Increase Summer Radio Sales

Manufacturers Plan Aggressive Campaign to Keep up Outlet—What the Dealers Can Do

In past years the sales of radio equipment have dropped to a very low point during the summer months. The socalled summer slump is generally ascribed to poor reception, static and competition of other warm weather recreation.

Many who have made a deep study of the subject feel that most of the falling off in business is due purely to psychological reasons. For instance the prospective buyer says to the dealer, "Well, warm weather's coming along now and there'll be a lot of static and the reception will be on the bum. Guess I'll lay off radio till fall." To which the dealer may reply, "Yes, it's not much use trying to get anything these days. We don't sell hardly anything in the summer. Might as well shut up shop."

And so the prospect goes out of the store with his money still in his pocket.

A number of radio equipment manufacturers have definitely come to the conclusion that this sort of thing can be stopped. They believe that with increased appropriations for advertising during the summer months and the help of the dealers, radio sales will not slump this summer to anywhere near the point they have in other summers.

M. C. Rypinski, vice president and sales manager of C. Brandes, Inc., manufacturers of head sets and "Table Talkers" says, "For our part to help the dealer and at the same time clear up the public mind on this subject of summer radio, we have taken page space in the largest magazines in Can-

ada and the United States. And most of this advertising is directed to the public telling the facts on what conditions will be this summer. This cannot but help react in favor of the dealer. In addition we will distribute attractive window displays with summer radio as the prevailing thought. We have taken advertising space in the newspapers and have scheduled it at the time the summer lull should commence. We have prepared dealer helps—and all of this with the thought of summer radio back of it."

Other manufacturers are also realizing that they will have to put a shoulder to the wheel, and E. B. Mallory, chairman of the radio section of the Associated Manufacturers of Electrical Supplies has sent an open letter bringing out the facts about summer radio. In this letter he brings up eight very important points of which the following are brief extracts:

1—There will be a Democratic national convention held in New York and a Republican national convention in Cleveland in June. Tens of thousands will be interested in material broadcast from these conventions, assuring a generous purchase of receivers.

2—Presidential election will be in November and during the months of September and October campaign activities will be broadcast, insuring a marked increase in the demand for radio apparatus.

3—There are many more Class B stations in operation this summer than last summer so that reception during

the hottest summer months will be noticeably improved over last year.

4—The new allocation of wave lengths, particularly among the higher powered stations will insure better reception and will cause less interference.

5—The radio apparatus manufactured by practically every member of the Association has been considerably improved over that offered for sale a year ago, and this will contribute in no small measure to a greater interest due to better reception.

6—The sale of receiving sets has increased continually since last summer and has reached unprecedented proportions in the past few months and will continue this spring, obviously providing a vastly increased radio audience.

7—The prices of radio equipment have been greatly reduced in the past year.

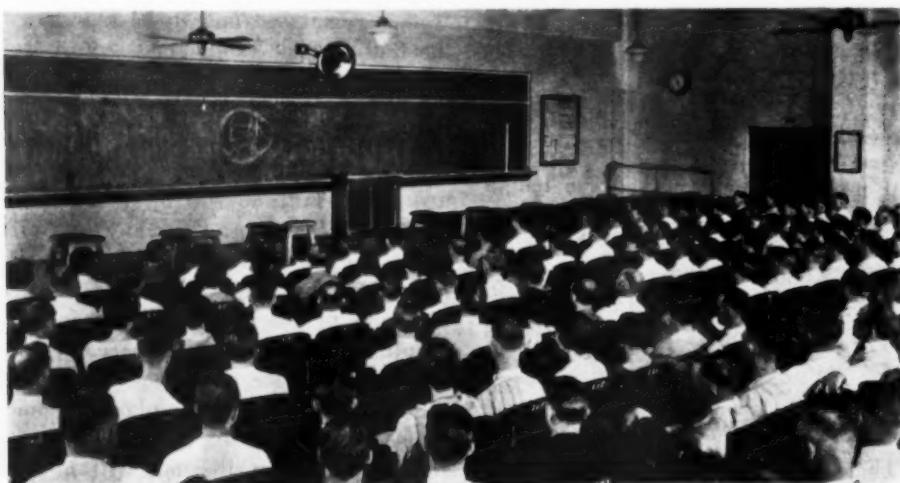
8—Records show that sales in the summer are at least one half the volume of winter sales, even without any effort to influence the buying public.

New Broadcast Station

KGO is the signature of the new superbroadcasting station erected at Oakland, Cal., by the General Electric Co. It is the largest station on the Pacific coast, if not in the world, and is the only large station designed and constructed from the ground up exclusively for popular broadcasting. KGO is a sister station of WGY, at Schenectady, N. Y., and is the second link in a three station project of the General Electric Co. The third station will be built at Denver, Col.

In its studio, control room and power station, KGO the Sunset Station, embodies the latest developments in the radio art. Its power and antenna systems, a thousand feet away from the studio building include all the mechanical and technical refinements that have marked the new achievements in broadcasting. The engineering resources of a great electrical organization have been brought into the problem of making this station one of which Californians may be proud and which every listening radio fan may enjoy.

The Pacific Coast station is located on East 14th Street, Oakland. The site was selected because of its technical advantages, the availability of musical talent and its proximity to San Francisco, the great commercial center of the Pacific coast. It is a two story brick building.



Why Not a Radio in the Local Auditorium? Electragists Are Finding This Work Profitable in Many Communities From Both a Wiring and Merchandising Standpoint—View Shows Class at Palmer School of Chiropractic, Davenport, Iowa

Chats on the National Electrical Code

By HUBERT S. WYNKOOP, M. E.

Monthly Discussion of National Electrical Code Practices by Well Known Authority in Charge of Electrical Inspection, City of New York

Wiring Boiler Rooms

In a boiler room where the temperature near the ceiling frequently reaches 200 degrees F., it is the practice to draw out the ashes and wet them down with a hose stream. Thus we have both heat and dampness present. The Code discourages the use of rubber insulation for temperatures above 120 degrees F.; and it also discourages the use of slow-burning wire where moisture is present. But the boiler room must be wired. How?

Doesn't varnished cloth insulated wire offer a solution? We can probably obtain a special varnish which will not flow at 200 degrees; and if we can I imagine that it will probably resist moisture very well.

Conduit for 3-Wire Systems

Table 2 of 503m of the Code is intended solely as a ready reference for conduit sizes required with "three-conductor convertible systems". Therefore it is unprofitable to speculate over the possibility of placing a cable larger than the larger wire of the combination in a given conduit. Where a combination other than the usual three-conductor convertible system is selected, resort should be had to the following note under table 3:

For groups or combinations not included in the above tables, consult the inspection department. For such groups or combinations, it is recommended that the conduit be of such size that the sum of the cross sectional areas of the several conductors will not be more than 40 percent of the interior cross sectional area of the conduit.

Fusing of 2-Wire Systems

Section 807b provides for the granting of permission to omit the fuse in the grounded leg of an identified "system". I interpret the word "system" as including the fixtures. Section 1402b calls for the identification of one of the fixture wires and the polarization of the fixture. Whether the permission should be granted depends upon two things: (a) is it the practice yet in your territory to use polarized fixtures with the screwshell lead identified? and (b) are you reasonably assured that the service leads are not likely to be re-

versed, thus throwing the fuse on the grounded wire?

The point I am endeavoring to make is that a permission to omit one of the two fuses in a 2 wire system cannot intelligently be granted unless the character of fixtures and the reliability of the personnel and layout of the lighting company are known.

Ground 2-Wire D. C. System

My attention has been called to the unauthorized omission of the former prohibition of a ground on a 2 wire direct current system except at one station only (Section 902a). It appears in old No. 15Ac, and the Electrical Committee did not authorize an amendment. Old No. 15Ab, however, relating to 3 wire direct current systems has been properly carried over into the new Code.

Facing Backward

I note that the majority of the members of the Western Association of Electrical Inspectors seem to favor restricting branch circuits to 1000 watts. This is unfortunate. It is merely substituting a new speculative value for the old one (660 watts) which we have been for so many years trying to abandon. Surely there must be some better solution of the problems for which the new 15 ampere fuse will be held responsible!

Polarizing Fixtures

What advantage will be gained by forcing the polarizing of portable fixtures until polarized convenience outlets have come into general use? Under present conditions the only portable fixture that ought to be polarized is one carrying a single piece lamp base attachment plug. The industry has a great way to go before we shall be able to say that our grounding methods are complete from service to lamp.

Twisted Pair in Conduit

The Code does not prohibit twisted pair No. 14 circuit wire in conduit. But who wants to use it? It is stiffer, fills up the pipe more readily, costs more. If the practice should become established there will be weary days ahead

for Mr. Denton, in respect of the recasting of tables in Section 503.

Overloading Branch Circuits

Speculation is rife as to what is going to be done to limit the heating appliances on a branch circuit, now that the 660 watt rule is no more. Well, what have we been doing? With 16 sockets on a circuit, it has always been possible to connect 16 660 watt heaters to a 660 watt circuit—presuming that the occupant could afford the heaters and did not need the lights. And *there has always been* the temptation to replace a blown fuse by a larger one. We think that we used to control something by means of the 660 watt rule; but we've only been kidding ourselves.

Now comes an interesting preliminary report from a wide awake city of over 100,000 population to the effect that, whereas previous surveys developed very many cases of overfused branch circuits, a survey being made under the 1923 Code lists only a few items of this nature. The inference seems to be that the public will not limit itself to 10 ampere fuses but will stop of its own accord at 15. What bearing this situation will have on the 15 ampere branch circuit rule, or how the rule when more generally applied will affect the situation, remains to be seen.

Table Plugs

I am asked to chat about the table plug—the three receptacle contraption placed on the dining room table to provide connections for percolator, grill and toaster simultaneously.

Well: under the 660 watt rule it couldn't be used because each receptacle fed a 500 watt appliance and was really the beginning of a branch circuit, and no fuse protection had been provided for the circuit. But it was used, just the same.

Now under the new rule this plug, which is theoretically a 1500 watt appliance, can perhaps be connected to a branch lighting circuit through a 15 ampere floor outlet. (It can and will also be connected to a key socket as formerly.) Or, it can be attached to a convenience outlet rated at 660 watts.

This of course is wrong—not so much because it may overload the branch circuit as because it is quite sure to overload the receptacle at the outlet.

All of the above does not condemn the table plug, but does show that a special circuit (to the floor outlet) should be provided, that a special heavy duty receptacle should be provided at the floor outlet, and that the table plug should not be approved if equipped with a cord carrying the usual attachment plug.

This fable teaches that the table plug must not be attached to a branch lighting circuit—unless possibly such a circuit has a heavy duty receptacle connected to it—and I question whether any circuit carrying a heavy duty receptacle ought to be classed as a "branch lighting circuit".

Flexible Tubing Connectors

I hear that in some quarters an effort is being made to demand flexible tubing connectors which are a part of the box or plate, the argument being that although there are a number of approved separate tubing connectors, none of them is reliable. This matter has been discussed intermittently during a period of years, and has now become vital because a box or plate is required at each outlet under the 1923 Code. With one inspection department accepting separate connectors and another demanding connectors attached to the box or plate, electrastists ought to get busy and work for a uniform ruling.

Vehicular Tunnel Lighting

Model Determines Illumination Needs of New York-New Jersey Project

One of the greatest engineering projects attempted in recent years is the building of the Hudson River vehicular tunnel which will link New York to New Jersey. Traffic between the two states is at all times very heavy, and because of New Jersey's popular resorts, weekends and holidays bring a congestion of automobiles that is far beyond the capacity of the existing ferry services.

One of the most difficult problems in connection with the building of the tunnel has been proper illumination. The illuminating engineering laboratory of the Westinghouse Lamp Company recently became interested in this problem and began a series of experiments to determine the best possible lighting system. In order to study all suitable

systems of illumination under approximate operating conditions, an exact model of the tunnel was constructed.

The model here shown, which is complete in every detail, is on a scale of one inch to one foot. It is twenty nine inches in diameter and ten feet long. Miniature automobiles built in proper scale show exactly what traffic conditions will be, while the lighting units provide the exact illumination intensity proposed. There will be twin tunnels, one for east and one for west bound traffic, one slow and the other fast moving. The tunnels will each be a mile and three quarters long, with a 20 foot roadway and an overhead clearance of 13 feet 6 inches. The cards and the ribbons on the face of the model explain each part of the construction, as follows:

1. Ventilation. Air completely renewed 42 times per hour. Transverse ventilation; no longitudinal movement of air.
2. Exhaust ports every 15 feet throughout.
3. Telephone and telegram cables. Annual income \$100,000.
4. Fire extinguisher.
5. Water supply pipe.
6. Continuous fresh air supply to roadway.
7. Fresh air flues every 15 feet throughout.
8. Fresh air duct running through the entire length of the tunnel.
9. Exhaust air duct running through the entire length of the tunnel.

10. Tunnel segment, weight 3,000 pounds.
11. Weight of complete ring 21.6 tons.
12. Concrete.
13. Sidewalk.
14. Power cables for operation of tunnel.
15. Fresh air expansion chamber.
16. Fresh air flues every fifteen feet throughout.
17. Drain.

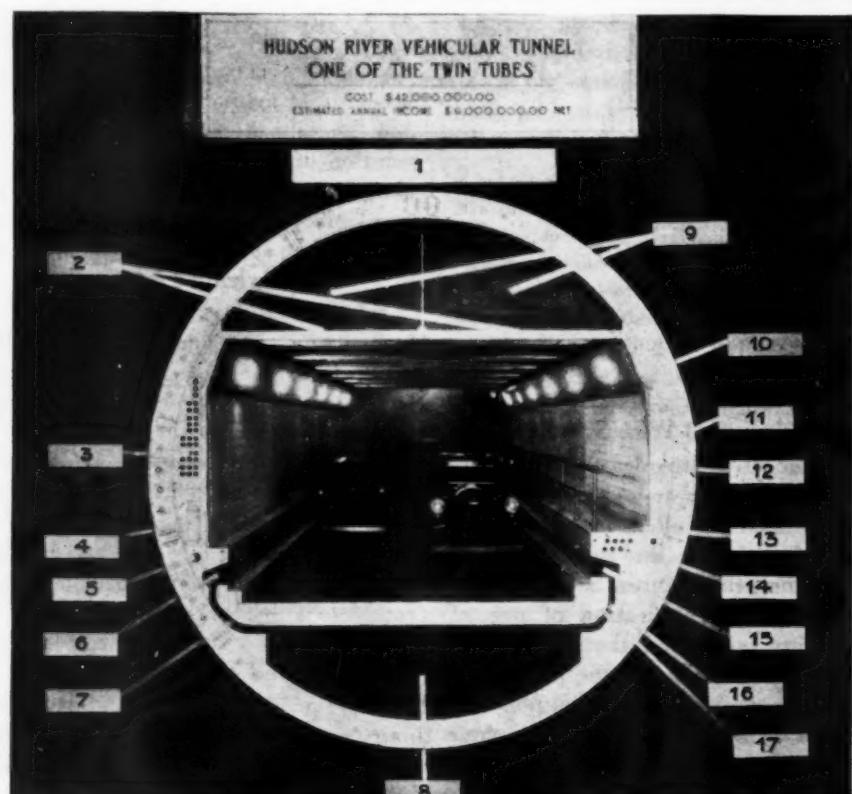
Leads to Larger Sales

Purchasers of crystal sets almost always come back again for something better. Not that the crystal set is useless, but its range is necessarily limited and it is difficult to do very selective tuning unless the set is out of all proportion to its real value.

One dealer occasionally has a special sale of crystal sets. He gets the names and addresses of all the purchasers of the sets and then follows them up for sales of more pretentious sets. He states that a majority of his sales follow-ups result in sales of tube sets.

Trade School Radio Course

The Bushwick Evening Grade School, Brooklyn, N. Y., has a new class in radio construction and maintenance with Ralph E. Hersey of the Western Electric Co., as instructor. The class meets two nights a week and is open to all.



Model of the Hudson River Vehicular Tunnel Made for the Purpose of Determining the Most Efficient Lighting System

Uniform Estimating

The problem of the contractor in placing a fixed price upon a job made up of many variable factors of materials and labor—particularly the labor, subject to so many things that affect its relation to each special job—is a difficult one. But the more difficult task of the contractor today is to obtain any confidence from the buyer in the figure that he submits as his price after carefully figuring the job.

The reason is not hard to find when one examines the figures submitted from a number of contractors on almost any job—figures ranging so far apart between the low man and the high man that the buyer is bewildered and suspicious in trying to understand it.

There will be no answer to this problem so long as each contractor applies his individual methods of estimating to arrive at his price—methods based on only his own experience applied through rough “average” units collected from his previous work but which often only vaguely fit the peculiar conditions of the new job before him. If his figures are correct, it profits him little if his competitors’ estimating consists largely of “guesstimating”.

Not until the electrical contractors adopt uniform estimating methods and submit consistently accurate bids, can the confidence of the buyer be secured. That result is worth almost any price—but the price is only the determination by each individual that he will do his part by adopting the A. E. I. Estimating Manual instead of using his own individual method.

In the history of electrical construction work many methods of estimating labor costs have been developed by electrical contractors and groups of contractors throughout the country. Several of these compilations of figures have been published, but all of them have had the serious weakness of being only general averages and as such not

fitted to be applied to the particular piece of work before the estimator for his consideration. Many factors of job conditions materially affect labor costs and upset any fixed units which might be applied to labor operations. In the past these variations from average units have been largely adjusted by an intuitive feeling on the part of the estimator that certain allowances must be made, either plus or minus, from the fixed average unit of the system which he uses for estimating, but such allowances are vague and unsystematic.

The Manual of Estimating of the A. E. I. varies from all previous methods in that the units are not general averages under indefinite conditions, but are “standard times” under “ideal” conditions, and then definite percentages of variations for the job factors are set up by which these standard time units may be adjusted to fit the peculiar conditions under consideration. It substitutes definiteness and system for intuition and uncertainty. All units are given in the terms of man hours which represent the average of the normal crew used for given operations—thus giving a unit that is common to the entire country.

This Manual represents four years of study by the Cost Data Committee under the leadership of A. L. Abbott, as chairman. Grouped around the committee were over 100 contractor concerns in many cities throughout the United States and Canada, and the Manual is the result of the broadest study of the kind ever made. The method and the data have been tried out on large numbers of jobs and from all reports have given results consistently close to accurate.

The adoption of systematic estimating methods will encourage systematic handling of the work on the job, develop increased production efficiency, and give to the building public more economic service.

Lawrence W. Davis

ORGANIZATION ACTIVITIES

STATE CHAIRMEN AND SECRETARIES

State	Chairman	Secretary	State	Chairman	Secretary
Ontario, Canada:	Harry G. Hicks,	J. A. McKay,	Maryland:	A. C. Brueckmann,	C. Philip Pitt,
British Columbia:	203 Church St., Toronto	24 Adelaide St. W., Toronto	Michigan:	Keyser Bldg., Baltimore	7 St. Paul St., Baltimore
	S. E. Jarvis,	R. A. Graham,	Missouri:	Henry Roseberry,	H. J. Shaw,
Colorado:	570 Richards St., Vancouver	929 Pender Street, W.	New Jersey:	41 Pearl St., Grand Rapids	613 Lincoln Bldg., Detroit
	J. Fischer,	H. Alex Hubbard,	New York:	A. J. Dunbar,	G. E. Haarhaus,
Connecticut:	213 15th St., Denver	E. & C. Building, Denver	N. & S. Carolina:	Frisco Bldg., St. Louis	St. Louis
District of Col.:	247 State St., New London	H. R. Harper,	Ohio:	Geo. E. Davis,	
	Frank T. Shull,	635 D St., N.W., Washington	Pennsylvania:	23 Central Ave., Newark	
Florida:	Elliott St., Washington	L. D. Little,	Tennessee:	F. A. Mott,	
	Preston Ayers,	Orlando	Wisconsin:	29 St. Paul St., Rochester	H. F. Janick,
Indiana:	Orlando	A. I. Clifford,		N. L. Walker,	F. E. Robinson,
Iowa:	T. F. Hatfield,	Arthur Tucker,		Raleigh	Charlotte
Kansas:	102 S. Meridian St., Indiana's	1007 Odd F. Bldg., Indianapolis	Ohio:	C. L. Wall,	Walter R. Keefer,
	Louis L. Corry,	510 Brady St., Davenport	Pennsylvania:	212 S. Main St., Akron	939 E. McMillan St., Cin'nat
Louisiana:	C. S. Smallwood,	Arthur Tucker,	Tennessee:	R. W. Keck,	M. G. Sellers
	1017 N. 5th St., Kansas City	619 Jackson St., Topeka		Allentown	1518 Sansom St., Philadelphia
	Robley S. Stearnes,	I. G. Marks,		P. W. Curtis,	J. A. Fowler,
	624 Carondelet St., N. Orleans	406 Mar. Bk. B., N. Orleans		Chattanooga	118 Monroe Ave., Memphis
				L. W. Burch,	H. M. Northrup,
				202 E. Wash'n Av., Madison	25 Erie St., Milwaukee

LIST OF LOCAL ASSOCIATIONS AND MEETINGS

STATE AND CITY	LOCAL SECRETARY	STREET ADDRESS	TIME OF MEETING	PLACE OF MEETING
ALABAMA				
Birmingham	J. R. Wilcox	313 North 19th St.	Tuesday 10 a. m.	
Montgomery	P. W. Crump	14 S. Court St.	Mondays	Members' Stores
ARIZONA				
Phoenix	F. C. Hoeppner	Hoeppner Elec. Co.		
CALIFORNIA				
Anaheim	Mr. Waite			
Covina	F. Rambo			
Fresno	Clyde F. Smith	1162 Broadway	Each Week, Friday	Ontario
Fullerton	J. A. Lenzinger	Brea, Calif.	1st & 3rd Monday	Goodfellow's Grill
Long Beach	E. Cummings	So. Cal. Edison Co.	Noon Daily	Garden Grove Hotel
Los Angeles	Helen I. Mikesell	1109½ S. Hill St.	Thursdays	Recreation Park
Oakland	Mr. Chilcott		Tuesdays	1109½ S. Hill St.
San Francisco	E. E. Browne	313 Fifth St.		Builders' Exch.
South Pasadena	J. Jacobs	1128 Mission Street	Tuesday 8 p. m.	States' Cafe
COLORADO			12 Noon, Thursday	Cham. Com. Bldg.
Denver	Alex. Hubbard	E. & C. Building	2nd Tues. and 4th Thurs.	
Pueblo	H. Ashcraft		2nd Tuesday	E. & C. Building
CONNECTICUT				Commerce Club
Hartford	A. A. Angello	473 Park St.	First Tuesdays	Hotel Bond
Waterbury	D. B. Neth	Conn. Light & Power Co.	2d Tuesday Evening	
DISTRICT OF COLUMBIA				Potomac Elec. Power Co.
Washington	R. W. McChesney	Munsey Bldg.	2d Thursday	
FLORIDA				108 W. Bay Street
Jacksonville	M. A. Ladd	Stinson Electric Co.	1st Tuesday	
Miami	C. E. Pullen	Pullen-Zohl Co.		Dafodil Res.
GEORGIA				
Atlanta	W. C. Drake	Ga. Ry. & Power Co.	12:30 Friday	
Savannah	Sylvan M. Byck	141 Bull Street		
ILLINOIS				11 S. Lasalle St.
Chicago	J. W. Collins	179 W. Washington St.	4th Wednesdays	
Master Contra. Ass'n.	F. J. Boyle	31 West Lake St.		Y. M. C. A.
Decatur	E. O. Weatherford	114 E. William St.	1st Wednesday	Arcade Building
East St. Louis	C. F. Broderick	317 E. Broadway	Saturday 2 p. m.	Post Hall
La Salle	Edward Blaine	238 S. Jefferson St.	1st & 2nd Tuesday	Endres Hotel
Peoria	L. B. Van Nuys	18th & Broadway	Mondays	214½ No. 6th Street
Quincy	John Harbison	407 E. Adams St.	2d & 4th Wednesday	
Rock Island	John Weishar	613 Tyler Street	Monthly	411½ E. Adams St.
Springfield	Chas. A. Meador			
Streator	William Schroder			Members' Offices
INDIANA				Chamber of Commerce
Evansville	O. P. Seitz	1814 Riverside Ave.	1st and 3rd Tuesdays	Labor Hall
Gary	A. B. Harris	570 Washington St.	2d & 4th Monday	B. & T. Ex. Building
Indianapolis	R. E. Snyder	704 N. Alabama St.	1st Tuesday	Asso. Bldg. Cont.
Peru	J. B. Johnston	West 5th Street	1st Thursdays	
South Bend	Mr. Moran, Jr.	832 N. St. Louis	Wednesday Evening	
Terre Haute	Carnoy Chess	523 Ohio St.		
Warsaw	L. F. Meyers	120 E. Market St.		
IOWA				
Davenport	Louis F. Cory	211 Fifth St.	Mondays	Chamber Com.
Sioux City	E. A. Artz	600 Bluff Street	Monday 6 p. m.	Members' Offices
Waterloo	H. L. Hileman		Monday 6 p. m.	
KANSAS				
Arkansas City	E. C. Simmons	146 S. Santa Fe Ave.	Mondays	Elks' Club
Salina	Geo. H. Shank	816 Kansas Ave.	1st Thursday	United Elec. Co.
Topeka	H. S. Lee	446 North Main	Monday Noon	
Wichita	L. A. Harris		Every Tuesday 7:30	
KENTUCKY				
Louisville	Chas. Daubert	921 S. Third St.	Tuesdays	B. of T. Building
Paducah	W. R. Kitterjohn		Last Thursday	
LOUISIANA				612 Gravier St.
New Orleans	S. J. Stewart	531 St. Joseph St.	2 p. m. Monday	Builders' Exchange
Shreveport	R. L. Norton	620 Marshall St.	Wednesdays	
MAINE				Graymore Hotel
Portland	Lyman P. Cook	12 Free Street	On Call	
MARYLAND				Southern Hotel
Baltimore	George Robertson	Park Bank Bldg.		
MASSACHUSETTS				
Fitchburg	R. M. Gowell	24 West St.	1st Monday	Fay Club
Haverhill	H. W. Porter	Malden Elec. Co.	2nd Monday	El. Light Station
Malden (Everett & Medford)	Harry J. Walton	897 Washington St.	Monthly	Malden Elec. Co.
Newton	C. L. Howe	West St.		Various Places
Pittsfield	Wm. J. Cullen	11 Court House Pl.		Members' Offices
Springfield	A. R. Tulloch	259 Main St.		Chamber of Comm.
Worcester	J. W. Coghlain			44 Front Street
MICHIGAN				G. A. R. Hall
Detroit	H. Shaw	613 Lincoln Building	Last Thursday	Association of Com.
Flint	J. Markle	718 S. Saginaw	Tuesday Noon	Chamber Commerce
Grand Rapids	Henry Romyn	40 Ionia Av., N. W.		
Kalamazoo	M. Randall	Exchange Place		
Saginaw	E. T. Eastman	209 Brewer Arc.		
MINNESOTA				
Duluth	D. Ehrlert	210 W. 1st St.	Subject to Call	Builders' Exchange
Minneapolis	W. I. Gray	511 S. Third St.	2d & 4th Monday	
St. Paul	E. Hoseeth	993 Selby Avenue	2d & 4th Tuesday	Elk's Club

ORGANIZATION ACTIVITIES—(Continued.)

J. Fisher, Denver, Colorado

Although a resident of Denver, Colorado, for twenty-five years, he first saw the light of day near Oregon, Illinois, in June, 1866. At nineteen years of age he taught school, and then attended the University of Illinois in the class of 1891. His first electrical experience was during vacation, when he remodeled lighting plants with his brother in Wisconsin for the United States Electric Company. He started in the electrical contracting business with his brother at Saginaw, Michigan, in 1891, and married Miss Cora Huggard of Rockford, Illinois, the same year. Then he went to Denver, Colorado, in 1899, and helped to incorporate the Electric Supply & Construction Company, and on January 1, 1900, became the president of that company. After seven years he sold his interest in the company which he helped to establish and continued in the contracting business under his own name. In 1922 he incorporated his present organization as The J. Fischer Electrical Company. He was the engineer as well as the electrical contractor on the Denver Gas & Electric Building and many other large buildings in Denver. He is a stockholder in the Colorado Discount Corporation and also the Union Deposit & Trust Company, and is a director in the latter.



J. Fischer

Electragists You Should Know



C. E. Pullen

C. E. Pullen, Miami, Florida

President of the Pullen-Zoll Company of Miami, Florida, was born in Wayland, Michigan, May 13, 1891. From his first position as secretary to the general manager of a Portland Cement Company in his home state, he accepted a similar position with the Miami Electric Light & Power Company, way down in Florida. Quick promotions followed—cashier, chief accountant, sales manager, office manager, assistant general manager—and then the war. He spent the year 1918 in the army with a Heavy Artillery Corp. Back again to Miami, with the same company, as assistant general manager. In September, 1920, he organized the Pullen-Zoll Electric Company at Miami, to engage in electrical merchandising. Associated with him were Robert Henkel and R. L. Zoll. The latter is secretary of the company, Mr. Henkel is vice president, and Mr. Pullen is president. Soon after the organization of the company it was found necessary to enlarge the scope of the business to include electrical contracting, and later, mechanical refrigeration. Since some time in 1923 the company has been engaged successfully in designing and manufacturing hand wrought iron electric fixtures, and this has become a large department of the present organization.

A. E. I. Executive Committee Meets

All Day Is Devoted to Midwinter Gathering Held at Building Trades Club, New York City, March 17

Once more the annual midwinter meeting of the executive committee of the Association of Electragists—International has taken place. It was held on March 17 at the Building Trades Club rooms, New York City. The meeting convened at ten in the morning and adjourned shortly after six in the evening with an hour out for lunch, which was served in another room on the same floor.

President James R. Strong presided and the roll call showed the committee-men present from their respective divisions as follows: Clyde L. Chamblin, San Francisco, Pacific Division; E. C. Headrick, Denver, Mountain Division; A. Penn Denton, Kansas City, Mo., Central Division; L. G. Ross, Superior, Wisc., Great Lakes Division; and J. A. Fowler, Memphis, Southern Division.

C. C. Carter, Vancouver, representing the Western Canadian Division; R. A. L. Gray, Toronto, representing the Eastern Canadian Division; and W. Creighton Peet, New York City, representing the Eastern Division, were prevented from attending, and the chair appointed in their respective places: G. M. Sanborn of Indianapolis; E. A. Drury of Toronto; and Paul H. Jaehnig of Newark. Mr. Sanborn, however, was unable to be present, since he was unfortunately taken ill upon his arrival at his hotel in New York.

After the roll call the minutes of the previous meeting of the committee held in Washington, D. C., October 8, 11 and 12, 1923, were approved, and Secretary Laurence W. Davis presented several communications for the approval of the committee.

President Strong then gave a brief report of the standing of the A. E. I. from an administrative standpoint, outlining his personal activities since the last meeting and touching on the future policies of the Association which should be made effective as he saw them. He reviewed the nationwide trip—full details of which were printed in these columns at the time—which he had taken last year accompanied by Secretary Davis and pointed out the value of such field work on the part of the officers. He said that he had attended the last meeting of the executive committee of the National Electric Light Association

held in Chicago the week previous and came fresh from the inspiration of that gathering.

President Strong expressed pleasure over the harmonious relations which the A. E. I. has with all other organizations of the electrical industry and cited especially the close coöperation apparent between it and the N. E. L. A., the Society for Electrical Development, the Electrical Supply Jobbers Association and the Electrical Manufacturers' Council.

He spoke at length concerning the Joint Committee for Business Development and explained that a reorganization of that body was taking place in order to make its functions more effective in the interests of all branches of the industry. On the motion of Mr. Fowler, it was voted that the Joint Committee in its reorganized form receive the hearty support of the Association of Electragists.

Mr. Davis followed with his report in which he presented figures to show the favorable condition of the Association financially and touched encouragingly on the status of the membership. He was of the opinion that in view of the substantial bank balance which the Association has at the present time, coupled with the assurance of increased revenue from various sources, particularly from the official magazine, the outlook is bright for a steady advancement of the organization.

He commended the splendid work of the field men, especially that of Arthur P. Peterson, who has spent a number of months in the southern states. Mr. Peterson, he said, had organized two state associations, the Carolina Association of Electragists and the Florida State Association, in both of which membership is dependent upon A. E. I. membership with no state association dues. Mr. Davis explained the need of a technical man in the employ of the Association to carry on the vital technical and estimating work which has been so well started. He said that the adoption of uniform estimating methods can only be accomplished by constant educational work and the continuous issuing of new and authoritative data.

L. K. Comstock reported as chairman

of the United States Chamber of Commerce Committee and also as chairman of the Union Shop Section of the Association. In the former position he told about the large amount of work being done continuously by the U. S. Chamber to help business conditions in all lines and how it is coöperating closely with trade associations and aiding them in better carrying on their functions for their respective industries.

As chairman of the Union Shop Section, Mr. Comstock urged the importance of the work being carried out by the members of this body. He was of the opinion that the value of this work should warrant a much larger support by A. E. I. members and that membership in the Section should perhaps be obligatory on the part of all such members employing union labor.

The importance of the Open Shop Section, of which Joseph G. Crosby of Philadelphia is chairman, was equally supported and it was the consensus of opinion that more information should be made immediately available to members of the Association on the aims and purposes of each Section and that they be urged to join either one or the other, or both if employing both kinds of labor. A resolution to this effect prevailed.

Before he reported as chairman of the Membership Committee, President Strong called on Wm. L. Goodwin, operating vice president of the Society for Electrical Development, to tell about the results of the joint membership arrangement which the A. E. I. effected with the S. E. D. after action had been taken to this end at the last annual convention in Washington, D. C.

Mr. Goodwin stated that while the results of this arrangement were satisfactory to the Society in a general way, he did not believe that sufficient effort had been exerted to bring about the results which it had been hoped to effect. It was voted that an arrangement be made whereby the S. E. D. service would be made available to those members of the Association who had not yet taken advantage of the joint membership plan.

Joseph G. Crosby, chairman of the Publication Committee, spoke about the improvements which so recently

have been made in the physical appearance and makeup of THE ELECTRAGIST and commented on the increased circulation which has been in effect since the first of this year. He emphasized the value of advertising space in this publication in view of the increased circulation and said that every effort would be made to keep the circulation on the increase until a complete coverage of the contractor-dealer branch of the industry is brought about.

Leslie G. Ross, chairman of the Standardization Committee, stated that one subject particularly had been under consideration; namely, that of the elimination of the use of black conduit and fittings. It was the judgment of that committee, he said, that there is no other one set of articles necessarily carried in stock by contractor-dealers which involves or ties up so much money, and although the elimination of black conduit and fittings may require that somewhat larger stock be carried in the other makes, it would be a considerable saving in money as well as time and space in handling. This subject will no doubt receive action at the annual convention in October.

Arthur L. Abbott of St. Louis, reported as chairman of the Cost Data Committee, on the work of preparing and issuing the House Wiring Manual, which recently was made available to members of the Association. He said the publication of this manual had taken years of work and the final result was due in no small part to the untiring efforts of Fieldman Peterson, who had devoted much time to securing the necessary data to make it practical and authoritative.

Secretary Davis read the report of the chairman of the International Relations Committee, in the absence of Mr. Gray, in which it was said that an effort had been made to make up a committee composed of Canadian members to bring this large portion of the membership of the Association into closer relations with the organization, but that to date appointments to this committee had only been made by a few of the larger cities.

In the absence of C. C. Carter, chairman of the Credit and Accounting Committee, the secretary read his report. He appealed to the younger members of the trade, those just starting in, to use the Standard Accounting System or the New Business Record of the Association as an essential aid to success in

this branch of the electrical business. He said conditions in his province in this respect are above reproach at the present time.

As W. Creighton Peet had been forced to make a hurried trip to Central America, where his mother had been taken seriously ill, the secretary was called upon to read his comprehensive report as chairman of the Trade Policy Committee. From the discussion which followed, it was evident that this was one of the most important reports ever put before the Association. It was voted that it be not released for publication until it is presented to the various organizations within the industry which are involved in trade relations.

E. C. Headrick stated, as chairman of the Legislation Committee, that efforts had been largely devoted to the studying and securing of information which would assist in the drafting of a model ordinance governing electrical installation inspection work.

General Counsel Franz Neilson gave a report touching on the legality of certain trade association functions. He cited a recent court case and touched on the use of the Electragist trademark, in the light of which he said the use of a common trademark is only unlawful

when the practice is in the furtherance of a scheme to limit competition.

The last committee report to be made was that of the chairman of the Code Committee, A. Penn Denton. In this, which was unusually comprehensive, Mr. Denton emphasized the importance of forming local Code committees in cities all over the country and advised concerning the co-operation of his committee with bodies and organizations in the other branches of the industry. He pointed out some of the things which his committee has been called upon to help decide in connection with the 1923 revision of the Code, and its application to electrical work.

Brief reports were made by the chairman of the following committees: Electragists' Data Book, Joseph A. Fowler, chairman; Architects and Engineers, C. L. Chamblin, chairman; and Liability Insurance, Joseph A. Fowler, chairman.

Prior to adjournment, a number of announcements were made by President Strong including an invitation from the Society for Electrical Development to members of the International executive committee to visit the headquarters office of that organization the following morning.

Eastern Division Convention

Interesting Meeting Held in New York City
on March 18 With Dinner Dance at Night

After having attended their annual midwinter meeting held the day previous, the members of the executive committee of the Association of Electragists were in a mood to give a good account of themselves at the Eastern Division convention of the A. E. I., which took place on Tuesday afternoon, March 18, in New York City at the Hotel McAlpin. On the other hand some of the Eastern Division conventionists also were in a better position to support this affair, for they had likewise attended the meeting of the aforementioned executive committee.

Taken all in all, therefore, the proper groundwork had been laid and the setting made for a real honest to goodness, worthwhile convention that might be called a humdinger. President Strong presided, and before proceeding to official business he took occasion to introduce each executive committeeman to the assemblage by asking

him to rise and make a bow—but not to make a speech.

This preliminary over, the president proceeded to take up the various items on the program, the first being the presentation of a "Merchandising Policy Committee Report," which had been prepared by the chairman of the A. E. I. committee of that name, W. Creighton Peet of New York City.

Mr. Strong announced that this could not be presented by Mr. Peet himself as he had suddenly been called to Central America on account of the serious illness of his mother there, and that it would be read by Secretary Laurence W. Davis.

After its reading it was evident that this report had the hearty approval of the meeting. President Strong announced that it had been decided by the executive committee, who had acted upon it the day previous, not to release it for publication in view of its

manifest importance until it has been presented to the various organizations of the industry and acted upon by them. It was fully and favorably discussed and a vote taken to approve it.

"The Electragist" was the next subject to be taken up and by none other than the chairman of the Publication Committee of the International Association, Joseph G. Crosby of Philadelphia. Of course it is somewhat embarrassing to praise it too highly in these columns, but Mr. Crosby's earnestness in presenting the story of this magazine must be appreciated and upheld. And from what he said it is unquestionably the best all around paper in this branch of the business, bar none!

He described its growth from what might be called almost a bulletin in the early days of its existence to its present size of standard proportions, comparing favorably with its contemporaries in the field. He stressed the circulation it now boasts of, which is undoubtedly the largest of any trade magazine reaching the contractor-dealer exclusively, and pointed out the attractive advertising space it offers to manufacturers and jobbers of electrical goods. Mr. Crosby urged that members realize the fact that The Electragist is owned by them and they can help materially in making it bigger and better through assisting the headquarters office by contributing news, influencing new subscribers, and in other ways.

A. Penn Denton followed with a talk on the "National Electrical Code," which was full and complete as his talks invariably are on this subject. He covered the ground and left no stone unturned to bring about a better understanding of the meaning of the Code to all present. While he touched on the many phases of his work as chairman of the Code Committee of the A. E. I. and also as a member of the electrical committee of the N. F. P. A., which includes attending various meetings of inspection bodies, besides attending the meetings of these two organizations just named, and keeping everlastingly in touch with Code doings, he appealed mainly to contractor-dealers in all parts of the country to form local Code committees. He advised that he had initiated this movement sometime ago, and though it was now beginning to bear fruit, there remains much yet to be done before the

ideal of Code enforcement will be reached.

"Coöperation in California" was presented by Clyde L. Chamblin of San Francisco. He said there were a good many things which needed doing and undoing in his section of the country before perfection in the business could be attained, but at the same time he believed the western industry was ahead of the eastern in many respects. He outlined briefly the position of each branch of the industry on the coast in regard to trade policies, and it was apparent that close coöperation on the part of all interests for a number of years has had a telling effect. He emphasized the importance of local association work.

The afternoon meeting wound up with a straight from the shoulder talk on electrical precepts and policies by P. B. Zimmerman of the National Lamp Works of Cleveland. Mr. Zimmerman centered his remarks around a plan his company has worked out to be the means of promoting more business by which all branches will benefit. He said the program was for a period of five years and would be stimulated by the public itself by reason of the giving away of a \$15,000 electric home to the person writing the best essay on home lighting. He outlined how the contest would be carried on to interest electrical interests and architects, and how through mediums of extensive advertising the housewife and the man in the street would be reached with this important electrical message.

The dinner-dance in the evening was known as "Ladies Night." At 6:30 a reception to the electrical men and their ladies was held and at seven o'clock everybody was seated for the food fest. It was readily admitted that the deliciously prepared delicacies tickled the palates of all, and perhaps this gave Joe Fowler, that silver tongued orator from Memphis, even more of a silver tongue than usual. Yes, his after dinner speech will long be remembered. As for the dance, O, girls, it couldn't have been any better. And the end of a perfect day for the second annual convention of the Eastern Division of the A. E. I. came to a close.

Open and Union Shop Section Meetings

During the morning of Tuesday, March 18, preceding the Eastern Divisional convention, meetings of the Open and Union Shop Sections of the

Association were held in the mezzanine committee rooms of the McAlpin Hotel, presided over by the respective chairmen, Joseph G. Crosby of Philadelphia and L. K. Comstock of New York City.

Figure by the Manual

Another evidence of the efficacy of the House Wiring Manual, the latest addition to the A. E. I. Manual of Estimating, has just come to light.

It seems that bids were called for on a knob and tube job, new frame house, which included 14 ceiling outlets, 7 wall outlets, 17 convenience outlets, 8 single pole switches, and 3 three-way switches. A first class job was required.

The highest bid was \$145, and the lowest bid was \$94.25, while the several other bidders guessed at five or ten dollar jumps between high and low. The variance in the figures submitted proved conclusively that it was a guessing match instead of an estimating contest.

After the transaction was closed, an electrical engineer took the House Wiring Manual of the Association of Electragists and estimated the material and labor, with the latter at eighty cents an hour, getting exactly \$113.25. Just to test the accuracy of the Manual, the same job was figured by another electrical man and his result was \$113.36 for labor and material.

These figures represent the prime cost, and when there is added any fees and other costs, with the "stop, look and listen" overhead advocated by Commissioner Eiditz, and then a living profit, where will the low bidder get off?

European Callers

The headquarters offices of the Association of Electragists received a visit from the delegation of lighting experts from Europe on March 3. Following are the names of the visitors:

G. A. Percival, Edison-Swan Electric Co., Panders End, Middlesex, Eng.; Gordon Franklin, Metropolitan-Vickers Electrical Co., Ltd., Trafford Park, Manchester, Eng.; J. E. Rosenthal, Osram Co., Berlin, Germany; J. W. Stephens and W. Millner, The British Thomson-Houston Co., Ltd., London; Cecil Hughes, Siemens & English Electric Lamp Co., Ltd., London; W. H.

Williams, The General Electric Co., Ltd., London.

The delegation was escorted by S. E. Doane of the National Lamp Works, and A. L. Powell of the Edison Lamp Works. President Strong and Secretary Davis of the A. E. I. received the guests and explained to them the workings of the Association in which they all showed great interest.

The British Thomson Houston Company organized the trip with a view to familiarizing the participants with the lighting business in this country, and also with the various branches of the electrical industry. The trip took in important cities as far west as Chicago. The delegation returned home last month. Mr. Doane also went to Europe on March 4, and Mr. Powell will sail some time next month for an extended trip abroad in the interests of his company.

Looking Backward

Although it is a little late in the season to mention New Year cards, G. M. Sanborn of Indianapolis, sends in one that he considers a classic and believes should be given publicity. It is reproduced herewith, the caption being "Thirty Years Ago":

I REMEMBER WHEN—Eggs were three dozen for 25c; butter, 10c the pound; milk was 5c a quart; the butcher gave away liver and treated the kids with bologna; the hired girl received \$2 a week and did the washing; women did not powder and paint (in public), smoke, vote, play poker, or shake the shimmie.

Men wore whiskers and boots, chewed tobacco, spit on the sidewalks, and cussed. Beer was 5c and the lunch was free. Laborers worked 10 hours a day and never went on strike. No tips were given to waiters and the hat check grafter was unknown. A kerosene hanging lamp and stereoscope in the parlor were luxuries. No one was ever operated on for appendicitis, or bought glands. Microbes were unheard of, folks lived to a good old age and every year walked miles to wish their friends A Merry Christmas.

TODAY—YOU KNOW—Everybody rides in automobiles, or flies; plays golf, shoots craps; plays the piano with their feet; goes to the movies nightly; smokes cigarettes; drinks Rookus Juice; blames the High Cost of Living on the Republicans; never goes to bed the same day they get up, and

think they are having a wonderful time.

These are days of suffragetting, profiteering, excess taxes and prohibition, and if you think life is worth living, I wish you A Happy New Year.

Larger Quarters

Having outgrown its temporary quarters in the Architects' Building, New York City, the Electrical Board of Trade of New York, Incorporated, is removing to the Grand Central Terminal Building, where larger and more convenient quarters are being arranged.

In small town parlance this building would be designated as the "depot," as it affords housing for the terminal of the New York Central railroad. It faces on Forty-Second Street, runs on up to Forty-Fifth Street, and covers all of the area between Vanderbilt and Lexington Avenues with the exception of the latter corner on which stands the Hotel Commodore.

An announcement from the Board of Trade states that the new quarters are located on the fifth floor of the terminal building, comprise more than thirty-five hundred square feet, and will be ready for occupancy April 1.

New York League Listens to Radio Problems

Interesting details of experiments in radio broadcasting that are being carried out from station WEAF of the American Telephone & Telegraph Company were described to almost six hundred members and guests of the New York Electrical League at the Hotel Astor February 27, by W. E. Harkness,

assistant vice president of the company, who is in charge of the station. This was the first regular monthly luncheon under the administration of President Walter J. Drury. Mr. Drury was unfortunately ill and the meeting was presided over by the first vice president, Albert Goldman.

Station WEAF, Mr. Harkness said, is devoting its attention to carrying out some very carefully planned experiments in radio broadcasting for the purpose of solving four problems: (1) Do people want broadcasting as a service? (2) What kind of broadcasting do they want? (3) How can it be given to them? (4) How can broadcasting facilities be made available to men who wish to broadcast?

In the eighteen months in which station WEAF has operated the first question has been satisfactorily answered in the affirmative. The second question is not fully answered, but by means of questionnaires, through the response to broadcasts appeals for expressions of opinion and by a study of the broadcasting situation throughout the country, it is very clearly indicated that the radio audience desires broadcasting to be raised to the highest possible plane. Symphonic music comes first in popularity. Jazz comes second with instrumental and vocal music occupying third and fourth place. It has also been shown that fully fifty-four percent of the radio audience desired talks over the radio, with a clearly expressed demand for educational and religious subjects.

The problem of financing the steadily increasing cost of broadcasting is being given very serious study. A radio music fund sponsored by prominent



See the Number of Fans Used in This Average Size City Theatre and Note Their Location and Distance Apart. Then Go After Your Local Playhouse and Show How an Uptodate Fan Installation Will Increase Business This Summer

citizens of New York City is now being raised to demonstrate whether the radio audience is willing to make voluntary contributions to secure the services of grand opera singers, that they may enjoy the highest class of music. Also the possibilities of selling broadcasting service are being developed through making the facilities of the station available to people who wish to broadcast paying a service charge.

So far 250 broadcasting privileges have been sold under very strict supervision and editing. Returns from this commercial broadcasting have been exceedingly interesting, correspondence having been received running from 3000 to 5000 letters. In one case 7000 letters were received in response to one ten minute talk. The average response is from 500 to 800 letters, but as in the case of other forms of advertising, the value of the service cannot be strictly reckoned by any such measure.

"There are four groups concerned in broadcasting service," said Mr. Harkness, "the public, the manufacturer and the distributor of radio equipment and the man who desires to broadcast, and it is felt that the public should contribute something toward the support of the service. Obsolescence, the development of the art and the improvement of radio programs are going to steadily increase the expenses of the operation. It is exceedingly important, therefore, that active efforts be made to solve the problem in a practical way and station WEAF is endeavoring through the continuation of these experiments to at least uncover the direction toward the solution of this problem.

Nassau-Suffolk Meeting

On March 12 the Nassau-Suffolk Association of Electrical Contractors held a meeting at Babylon, Long Island, New York. Edwin M. Seaman, secretary of the organization, reports an interesting meeting.

Radio Engineer-Dealer

N. L. Walker, president of the Walker Electric Company of Raleigh, N. C., seems to have adopted the plan published in the February issue of this magazine, advising electragists to become Radio Engineer-Dealers. In a recent issue of the local newspaper, Mr. Walker carries full page space

which advertises a two hundred dollar radio receiver—and no mention is made of the cheaper sets, which so often spoils the chance of selling genuine satisfaction to the customer.

New House Organ

The Hatfield Electric Company of Indianapolis have sent out the first issue of "The Hat Rack", an interesting house organ published by that company's employes. It is written in a humorous vein and should go far toward keeping up the spirit of good fellowship in the organization.

Construction Activities

The review of activities in the construction industry as reported by the F. W. Dodge Corporation is of interest to electragists. This report covering January of this year shows an aggregate increase over the same period of last year.

Taking the country as a whole, with the exception of the Pacific Coast and Mountain regions, the following figures indicate conditions in the various sections:

January building contracts in New York State and Northern New Jersey amounted to \$108,575,100. The increase over the previous January was 69%, although there was a decrease of 2% from December. This January record does not include a certain \$18,000,000 hotel project in New York City. Although this contract was actually let, work will not be started for a year.

Contracts awarded in the New England States during January amounted to \$22,190,000. This was a decrease of 17% from the previous month, and of 3% from the previous January.

January building contracts in the Middle Atlantic States (Eastern Pennsylvania, Southern New Jersey, Maryland, Delaware, District of Columbia and Virginia) amounted to \$34,019,600. The increase over December was 39%; over the previous January a fraction of 1%.

January building contracts in Western Pennsylvania, West Virginia, Ohio and Kentucky amounted to \$25,631,400. This was a 29% decrease from the previous month and a 4% decrease from the previous January.

Contracts let in January in the Southeastern States (the Carolinas, Georgia, Florida, Tennessee, Alabama,

Mississippi, Arkansas and Louisiana) amounted to \$40,632,000. The increase over the previous January was 60%, over December, 28%.

Construction started during January in the Central West (Illinois, Indiana, Iowa, Wisconsin, Michigan, Missouri, Kansas, Nebraska and Oklahoma) amounted to \$66,651,900. This was a 9% increase over the previous month, and a 2% decrease from the previous January.

January building contracts in Minnesota, the Dakotas, and Northern Michigan amounted to \$4,251,500. Although this was a 42% increase over the previous January, it was a decrease of 51% from last December.

Annual Meeting of N. F. P. A.

The twenty-eighth annual meeting of the National Fire Protection Association is to take place at Atlantic City May 13, 14 and 15. A large attendance is expected and many members it is understood are planning to bring their wives and daughters. Headquarters will be at the Hotel Chalfonte-Haddon Hall, and convention sessions will be held in the beautiful Vernon room of that renowned hostelry.

New England Inspectors

At the Municipal Building in Springfield, Massachusetts, on February 13, the Western New England Association of Electrical Inspectors held a most successful meeting which was largely attended. More than two hundred were present at the afternoon session and about five hundred attended the evening session.

The following officers were elected, several of them succeeding themselves: Thomas Henry Day of Hartford, Connecticut, president; Wilbur C. Field, electrical inspector for the city of Springfield, vice president; secretary, Richard W. Forsyth of Greenfield; treasurer, Allen W. Hopkins of Springfield; executive committee, J. P. Rohan of Hartford, John Shea of Springfield, W. J. Mahan of New Haven, P. A. Neuman of Holyoke and N. L. Abbott of Brookline.

Mr. Day is the electrical engineer of the New England Insurance Exchange and a consultant for the Bureau of Standards in Washington. He has served as president of the association for four years and now will serve for two years more.

The next regular meeting of the as-

sociation is to be held at Pittsfield, Massachusetts, and it is proposed to take up two full days, May 14 and 15.

Electric Truck Week

New York City's annual electric truck show will be held again this year in the showrooms of the New York Edison Company from April 19 to 25. The plans provide for what will be virtually an electric truck week, introduced by an electric truck parade down Fifth Avenue on Saturday, April 19, with each day designated to show the application of the electric truck in a specialized industry and to include further an electric truck luncheon under the auspices of the New York Electrical League on April 23.

Retailers' Expense Series

Alvin E. Dodd is manager of the department of domestic distribution for the Chamber of Commerce of the United States at Washington, D. C., of which the Association of Electragists is a member. Mr. Dodd evidently believes in advertising literature which will be read, and so when he talks analyzing costs, he approaches the subject in the following manner:

"When you were a kid Old Man Coogan kept the variety store in Whisk-broom Center. His sugar barrel stood next to the kerosene can and he sold harness for both horses and ladies. If you had mentioned "Overhead" to him, he would have thought you were talking about the roof. He knew as much about cost keeping as he did about the memoirs of Madame du Barry, and he connected advertising with circus posters.

"Nowadays you can't laugh these items off; they're there whether you like them or not. If you'll not take the trouble to find out what your depreciation on fixtures is, Old Julius Whoosis across the street will, and he'll buy you out in a couple of years. You may think delivery costs and insurance are as unimportant to you as skid chains are to a hen, but there is always a competitor who'll make it his business to know where every cent goes."

Thus the reader is easily led to the Retailers' Expense Series which has been prepared by Mr. Dodd's department. Every electragist doing a merchandising business should send for the series.

Protecting Radio Dealers

A new policy has been established recently by Pettingell-Andrews Company, electrical supply jobbers of Boston, in the interests of their customers. The following excerpts from a letter to their dealers, explain the new policy:

"We believe the time has arrived when every distributor of radio material must establish a definite policy showing a substantial differential between the resale of radio material and the dealer or industrial plant that simply buys for personal use or for employees' use.

"We think you will fully appreciate the position which every electrical house has been placed in on this material. We have many industrials who purchase from us anywhere from \$20,000 to \$100,000 worth of electrical material a year. They naturally think they are entitled to as good a price on radio merchandise as the dealer. From the standpoint of purchasing power this may be true, but from the standpoint of ethics and policy, it is not the case.

"We believe that if such a practice is permitted to continue it would ultimately be the cause of destroying the proper resale channels of the radio industry."

Quotations of a fifteen percent discount on radio merchandise to those who are not radio dealers are given in the letter, and to prove the company's desire to protect dealer customers, the letter further states:

"In our desire to give all possible

support to our dealers, we want to say that if any dealer can prove conclusively to us that he has been in touch with a customer on radio material who has purchased directly from us through some other purchase source outside of a legitimate radio dealer, we will render a credit upon receipt of such proof covering the difference between the price at which the material was sold by us and the regular radio dealer's discount. This unqualified guarantee gives you absolute and complete protection. The only thing that we must expect from you, however, is definite proof connecting you with the transaction."

In taking this radical step the company explains that it believes the best interest of the radio industry as a whole demands it, and although it endangers a large volume of business, the justice of the company's policy will be recognized by all parties concerned.

Trial Order Plan

A campaign to stir up business was conducted during the month of March by the Steel City Electric Company of Pittsburgh. V. G. Fullman, Sales Manager of that organization, made up what he called a Trial Order, composed of bushings, locknuts, wirelet boxes, couplings, and other devices, the market price of which was \$25.24. This was advertised to electrical contractors at the Trial Order price of \$18. Supply jobbers were then notified that the campaign was under way and they were asked to instruct their salesmen to urge the contractors to take



In Its Trip Across the Country the Peerless Palace Has Spread the Message of Electricity to Peoples of Many Races and Climes. These Natives of New Mexico Were Deeply Interested



"Notice the Lighting Equipment"



"A Superior Wiring Device for every Electrical Need"

THE BRYANT ELECTRIC COMPANY
1421 STATE ST., BRIDGEPORT, CONN.

NEW YORK
342 Madison Ave.

CHICAGO
844 West Adams St.

SAN FRANCISCO
149 New Montgomery St.

advantage of the offer. The Trial Order shipments were made direct by Mr. Fullman's company, but were invoiced through the designated jobber. The Trial Order offer ended on March 31.

Important League Meeting

Rhode Island Men Hold First Get Together Under New President

The first dinner meeting of the Rhode Island Electrical League under the presidency of Frank G. Thurston, was held at the Turks Head Club, Providence, on February 29. After a dinner and the entertainment provided by a professional entertainer, Tom Mulgrew, Harry E. Dawson reported a present membership in the League of fifty-seven and the necessity of securing as many more members as possible and stated that the next meeting would be held about the middle of April.

A. H. Allcott, chairman of the program committee, then outlined the educational contest plan about to be carried out and emphasized the fact that the most essential thing at the present time is to sell the electrical industry to the people engaged in it. There are about six thousand people in the electrical industry in Rhode Island if all including the wage earners are included. The contest takes the form of wiring plans to be worked out by as many as can be persuaded to take part in the contest. Broadsides are to be distributed and the present plans indicate that everyone in the industry will receive the broadsides.

A. B. Baxter continued the report of the program committee by stating that through a questionnaire plans for the minimum number of outlets which should be provided in a home had been secured from forty-eight of the leading electrical men. These plans or a composite of them are to be printed and distributed to contractors, dealers, jobbers and central stations. The league will also send copies of the plan adopted to the mailing list of new homes and to a selected list of architects and builders. He also stated that a publication called "White Magic," is to be secured in quantity having the list of members of the League shown in an insert and that this will be widely distributed.

He also stated that the League is now promoting the broadcasting idea and that it is hoped soon to broadcast from the most powerful station in Prov-

dence, stories already being secured for the purpose from the S. E. D.

This fall there will be an electric home in the Blackstone Valley and an electric show in Providence.

Following these reports, President Thurston, who is an electragist, brought to the attention of those present that the contractor-dealer was the only division of the industry which was not doing its full part in support of the League. He made a plea for more membership from contractors and emphasized the point that the work the League was now doing would be of real benefit to them.

F. A. Boss, former president of the League and now chairman of the finance committee made a plea for more membership and asked every member to consider himself as a member of the finance committee and should strive to bring in at least one new member. He announced that the dues for contractor-and dealer members had been reduced from thirty-five to twenty-five dollars a year.

George W. Danielson, president of the Better Business Bureau of Providence, and one of the leading advertising agents of the city, was the principal speaker of the evening and spoke on the subject of the "Spirit in Business." He dwelt upon the great value of trade associations and that each such association was always the handiwork of a few men. Every man should boast about the business he is in and oversell rather than undersell his profession or business.

He said he considered the electrical business a much better one to be in than the automobile business because according to Babson, if the automobile

business continues to grow for two years at its present rate there will be more automobiles than homes and the automobile business will become one of replacements, while the electrical business according to good authority is not much beyond five percent of its possibilities.

He considered the big thought back of the electrical business, Improved Standards of Living, and stated that we should not take issue because salesmanship has not yet been highly developed in the contracting business because there has been no selling history in the industry. The men who founded the industry were not salesmen but manufacturers, engineers and capitalists.

He brought out the importance of knowing what a job is going to cost and having the courage to charge a price which will not only cover the cost but show a profit and in support of this statement cited cases in many other industries where the practice had been to cut prices, among them being the case of the printers in Providence, who discovered by careful calculation that during a single year they had lost a grand total of some sixty nine thousand dollars by being printers, a fact which caused them to adopt sound business policies in doing business from then on.

Personal service was another thing he emphasized, driving home the importance of the contractor keeping acquainted with his customers. Discover, he said, if the wiring your customers now have in their homes is of the vintage of 1910 or 1924. He hazarded the guess that forty percent of the customers of the contractors of Providence had in their homes wiring of the 1915



Crime Waves Have No Terror For Companies Whose Buildings Are Floodlighted at Night with X-Ray Reflectors in This Fashion. Loitering Pedestrians Beware!

WEBER DEPENDABLE WIRING DEVICES

Distinguish the best from the rest!

It is easy, and Decidedly Profitable



SPECIFY

"ROYAL" SOCKETS

They employ a familiar construction, but give unmistakable evidence of that nicety of manufacture and perfection of finish that have distinguished all Weber goods for more than fifteen years.



"Royal"
Pull Socket

And the Line is Complete

6 Socket Bodies

8 Switch and Rosette Bodies

20 Caps

19 Bases

HENRY D. SEARS

General Sales Agent

80 BOYLSTON STREET
BOSTON II, MASSACHUSETTS

DISTRICT SALES REPRESENTATIVES IN

New York Philadelphia Cleveland Chicago
San Francisco Los Angeles Seattle

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

type rather than of the 1924 type. He closed his remarks by dwelling upon the very great advantage of membership in the League.

Hudson Valley League

The third quarterly dinner of the Hudson Valley Electrical League was held at Newburgh, New York, last month, and was addressed by Laurence W. Davis of the A. E. I. among others.

The officers of the League are as follows: President, Roswell Coles of Kingston; vice president, Leon L. Jaminet of Poughkeepsie; secretary, Robert J. Caniff of Poughkeepsie; treasurer, George D. Bason of Newburgh.

Babies Help Electrify

It was left to J. M. Fried, enterprising electragist of Vicksburg, Mississippi, to start the new year with a unique advertising stunt.

During the close of last year when the local lighting company was extending its lines, Mr. Fried inserted an advertisement in the local newspapers, as follows:

FREE! To the first baby born in Vicksburg in 1924, one Electric Milk Bottle Warmer; provided the house is wired for electricity.

Followed with the name and address, that is all that appeared in the display, but it started a lively contest. One after another applied for the bottle warmer, but could not qualify because their homes were not wired. Of course Electragist Fried got the wiring jobs.

The winner submitted proof that his home was wired for electricity, and that on January 1 at seven o'clock in the morning he became the father of a ten pound baby. He was awarded the bottle warmer and the contest closed.

Toaster Campaign

The toast campaign which is being carried on by the Wheat Council of the United States is tying in with electrical interests wherever possible, the idea being to promote the larger consumption of bread by boosting the sale of electric toasters.

George T. Barrows, a prominent electragist of Pittsburgh, sends some interesting advertisements that were published in local newspapers by the Pittsburgh Electric League and the Wheat Council.

One plan used is to give away a

check for one dollar with every loaf of bread, the amount to apply on any electric toaster bought from dealers that take part in the movement. This plan is said to be largely increasing electric toaster sales.

Two Electragists Pass On

Word has been received at the headquarters of the Association of Electragists of the death of F. A. Starr, president of the J. Warren Gay Electrical Company, New London, Connecticut. Mr. Starr died very suddenly on February 13. He was a loyal supporter of association activities and his death is a loss to the electrical industry.

George M. Wheeler, president of the Maintenance Company of New York City, passed away on January 29, after a prolonged illness. Mr. Wheeler was an active worker in organization affairs and left a large circle of friends and associates to mourn his death.

Lighting Sales Pointers

Some unique selling points are brought out in a lighting survey made by the Society for Electrical Development. You may perhaps as a last resort succeed in making the sale you are after by bringing them into play. They refer to the use of globes recommended to reduce glare and sharp contrasts and the intensity of reflected light from ceilings and walls.

Globes were found to reduce the brilliancy of the light source from five percent for clear glass to forty percent for heavy frosted glass, and the reflec-

tion of light from ceilings and walls was determined to be approximately as follows:

	Reflection
Whitewashed ceiling	50%
Light orange or cream paper	50%
Blue, vermillion or brown paper	10%
Light green paper	20%
Light pink paper	35%
White paper	80%

The survey also brought out some interesting facts relating to foot candle standards of illumination advocated for both the home and the workshop. These standards, which should be known by every electragist, are as follows:

	Foot candles
Offices	2.5
Draughting rooms	5 to 10
Churches	1 to 2.5
Schoolrooms	3 to 4
Blackboards	3 to 6
Stores, according to color of wares	4 to 8
Machine shops	3 to 4
Dining tables	3
Drawing rooms	2
Library or study	4

Syracuse League Meets

On Thursday, March 6, W. Brewster Hall, district sales manager of Pass & Seymour, Incorporated, presided over a meeting of the Electric League of Syracuse, New York.

The speakers were: B. E. Salisbury, president of Pass & Seymour, Inc.; A. F. Hills, general sales manager of Crouse-Hinds Company; Raymond Marsh, general sales manager of Syracuse Washing Machine Corporation; E. W. Kendall, general sales manager of Pass & Seymour, Inc., and Mr. Walker, vice-president of the Walker Dishwasher Company.



French Lick Springs, Indiana, Was the Scene of a General Appliance Sales Conference of Western Electric Men Held March 3 to 7. Here Are the Fellows Who Attended

HUBBELL

SIDE-WIRED CONVENIENCE OUTLETS



No. 7575
With Plate
No. 6258

WIDEN your market for electric appliances by pushing the sale and installation of Convenience Outlets.

Convenience Outlets make the use of appliances convenient.

Hubbell Convenience Outlets are made in both side and top-wired types.

SHALLOW!
Only 13/16" deep;
suitable for thin
partitions.



No. 7550



Remember it's the Te Slots, that make outlets "Convenient"

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

Each speaker was assigned a canvas on which they painted word pictures of the central station, electrical supply jobber, electrical contractor-dealer, and competitive coöperation. B. E. Salisbury gave the concluding address entitled "A Panoramic View of the Industry as a Whole". Stress was laid on the opportunity for the Electric League to cement the interests of the electrical industry so that coöperation would be expressed in all activities.

Indiana State Group

A meeting of the Contractors and Dealers Association of Indiana was held on March 19 at Indianapolis. This state group was formed early last winter at the time Indianapolis was visited by President James R. Strong and Secretary Laurence W. Davis of the A. E. I. on their first annual tour of the south at that time.

Secretary A. I. Clifford reports that the Association has a membership close to one hundred. Dues have been placed at the nominal sum of \$2 per annum. In addition to the usual number of officers, namely, president, vice president, and secretary treasurer, an executive committee is made up of a representative from each Congressional district in the state.

Thomas E. Hatfield is president, Karl E. Nutting, vice president, and A. I. Clifford, secretary treasurer. The following are members of the executive committee: C. E. Jett, C. A. Evans, B. T. McCarten, C. Thomas, R. H. Jenkins, C. A. Kleinknecht, W. H. Morton, Karl E. Nutting, Gregg Kelly, Ralph A. Brassie, E. V. Trautman, Irving Steininger, and L. J. Beehmer.

Please Excuse Mr. Brown

At the annual election of the New York Electrical League, David Thiell Brown, who is somewhat of a humorist, and an ever popular member of the electrical fraternity, was elected secretary of that organization, as was noted in these columns at the time.

It is now Mr. Brown's duty to compile and publish the official announcements and documents of the League. Errors will often creep into editorial work of such a nature, however careful one may be. Just to start Mr. Brown off on the right foot, he evidently stepped on an error the first thing.

In a recent announcement from Secretary Brown's office, an apology was made for an error in the printed mem-

bership roster, in which T. M. Debevoise, attorney at law, was erroneously listed as an electrical contractor. Mr. Debevoise is counsel for the Electrical Manufacturers' Council and other interests, and to list him as an electrical contractor-dealer was almost unforgivable. But we all make mistakes and Mr. Brown should be excused without further censure.

Advertising Stunt

George H. Smith, proprietor of the Smith Electric Company of Bloomington, Indiana, believes in advertising, and as proof of this statement he took



Showing the Timely Blotters Which Were Sent Out Monthly

the picture here presented of some of his ideas on advertising as he has worked them out.

On the first of each month during 1923 he sent out to all of his regular and prospective customers a blotter and on this blotter was printed a seasonable message which called attention to his electrical service. In September for instance the following thought was stressed urging that the customer use correct lamps in the headlights of his automobile: "Beware of the cops! Be prepared to light up when your auto lamps burn out. These shorter days require more night driving. One of our lamp kits in your car will put you in the realm of safety and make night driving a pleasure".

Mr. Smith stated that five hundred blotters were mailed out every month at a total cost of approximately fifteen dollars a month. He believes that the

direct returns from this advertising were many times the cost and the indirect results unmeasurable. This year he is trying out a different direct mail scheme featuring the word Electragist.

Coffin Award

Awards were recently made to the factory workers of the General Electric Company under the stipulations of the Charles A. Coffin Foundation, named in honor of the founder of the company and established for the broad purpose of stimulating progress and public service in all branches of the electrical industry—public utilities, electric railways, among graduate students doing research work, and finally among employees.

There were one hundred and fifty nominations for awards made by department and office heads. These were reduced to seventy nine for final analysis, and awards were finally made to forty eight—sixteen to engineers, six to commercial men and one woman, ten to foremen, ten to shop workers, and five to administrative employees.

Heating Courses

This year's educational courses in industrial heating for central stations were held last month from March 17 to 29. The same courses were given simultaneously, one through the General Electric Company and the other through the Westinghouse Company. The committee on industrial heating, commercial national section of the National Electric Light Associations, directs these courses, and they are said to be highly successful.

International Members

When the good members of the Association of Electragists from Canada voiced their objection to the use of the word "National" in the title of the organization, they probably did not realize how the word "International" would broaden the borders of the Association.

At that time, with several hundred members in Canada, from Quebec to British Columbia, the Association was also represented in Mexico. Recently Fieldman Peterson made a vacation trip to Cuba, but could not resist the temptation to do a little business, so he established membership there.

When the foreign lighting mission visited the Head Offices, as they call them, last month, the inspiring talk



"—with the 5 year guarantee"

Just five words—but to the customer who comes to your store for a fan, they mean more than five hundred words of selling talk.

Seventy distributors, located at convenient points, carry EMERSON FANS. Write for their names.

The Emerson Electric Mfg. Co.

2018 Washington Avenue

50 Church Street
New York City

St. Louis, Mo.

A complete line of sales helps will mark your store as headquarters for the fans with the 5-year guarantee. Window displays, counter cards, blotters, envelope inserts, movie slides, banners, newspaper electros—send for the portfolio illustrating and describing them.



ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

made by General Manager Davis induced several of the London lighting representatives to take out associate memberships in the A. E. I. A. L. Powell remarked that he had accompanied this delegation on its jaunt around the country and so far his friend Larry Davis was the only one who had actually sold them anything.

So now the International membership roster reads: Canada, England, Cuba, Mexico, and the United States.

New Officers Elected

At the convention of the National Association of Lighting Equipment Dealers held in conjunction with the Fixture Market at Chicago, the following were elected officers and directors for the ensuing year: President, E. R. Gillet, Gillet Hoehler Co., Toledo, Ohio; vice president, H. I. Sacket, The H. I. Sacket Electric Co., Buffalo, N. Y.; treasurer, R. D. Paxson, Sterling & Welch Co., Detroit, Michigan; directors, C. L. Netting, Detroit, Mich.; J. C. English, Portland, Ore.; A. L. Oppenheimer, Cleveland, Ohio; W. Forve, Los Angeles, Calif.

Chas. H. Hofrichter, 231 Gordon Square Building, Cleveland, Ohio, was reappointed business manager of the Association.

Fixture Distributors

Contractor-Dealers Can Show Lighting Equipment Without Carrying Stock

One of the difficulties the contractor-dealer has had to contend with in handling lighting fixtures is the financial burden shouldered on him in carrying a complete stock. In addition to this investment it is necessary to set aside some of his valuable store space for a fixture display, and to do it right, the display room must be wired and provisions made for demonstrating the various units.

Realizing this condition, Albert Wahle, who had been closely associated with lighting equipment for thirty five years, conceived the idea a few years ago of distributing fixtures through electrical supply jobbers. Of course there were those who said it could not be done. Mr. Wahle thought it could, so he went about it to interest some of the fixture manufacturers in his plan. After thorough investigations had been made, he established the Albert Wahle Company in New York City as the selling organization for five associate fixture factories.

The next move was to establish distribution points. This was successfully worked out and at the present time more than fifty of the leading supply jobbers throughout the country are helping to carry out the Wahle Plan by carrying sufficient stocks so that ninety percent of the contractor-dealer's fixture requirements can be supplied immediately.

In some instances the supply jobbers have established fixture show rooms where the contractor-dealer can take his customer to see the lighting equipment demonstrated.

Frederick Schwartz, vice president of the Wahle Company says that they are demonstrating that the contractor-dealer is the proper channel through which to reach the public with lighting fixtures for the home at the least cost. He says that his company is co-operating with the electragist instead of competing with him, their policy being to help him sell fixtures without carrying an expensive stock.

To complete the plan, the Wahle Company has issued a selling portfolio in which more than two hundred types of lighting equipment are shown. Many of the plates are in natural colors, showing the variety of finishes. Although this illustrated selling portfolio actually cost more than five dollars each, it is being sent to contractor-dealers at about one third of that amount. The idea is to get into the hands of the contractor-dealer a plan to handle light-

ing fixtures without carrying an expensive stock.

There is no longer any reason why the electragist cannot tie in with the "Notice the Lighting Equipment" campaign and get some of that quarter of a billion dollars' worth of residence lighting business which is estimated for this year.

Cleveland League Work

Record Achievements Made Since First of Year

According to The Leaguer, published by the Electrical League of Cleveland, the work of this organization has been productive of unusually good results thus far this year and members are looking forward to record achievements in the future.

The Appliance Section Committee, meeting weekly, has devoted the greater part of its efforts to approving and criticizing advertising copy prepared for insertion in the local daily papers. Round table discussions are held on the sketches and copy presented by the advertising representative and members are unanimous in the belief that such general discussion has resulted in great improvement in the quality and effectiveness of the League's advertising.

The Wiring Section Committee, which has co-operated closely with the contractor-dealers, is at work on the revision of the city electrical ordinance. It has approved the plan of the contractor-dealers' representative, M. G. Buchan, to prepare a booklet dealing with electrical problems in building which will be distributed to all prospective building owners.

Greater activity than it ever has manifested since the foundation of the League has been shown this year by the Industrial Section Committee.

Acting on the recommendations of the 1923 committee, the present committee immediately got under way plans for arranging interviews to which the electrical men in Cleveland factories are to be invited for the purpose of discussing new electrical applications, engineering and maintenance problems. This work is well started.

This same committee is exercising supervision over a weekly industrial electric page which appears every Tuesday in the Cleveland Times. This page has shown vast improvement, committee members believe, and is now a real force in the education of Cleveland industrialists as to the superior value of



Certain Preparations Are Said to "Chase Dirt," But This New Fangled Apex Cleaner Chases It, Catches It, and Hangs on to It Until Emptied in the Refuse Can—So States the Advertised Message at Least



It is a tangible, explainable, appreciated feature of the iron that dealers can sell with conviction and users use with ever-increasing pleasure.

"The Bevel—that's the thing!" is the keynote of a substantial, brass tack program of selling irons that will be ready on April 15.

The advertising plan embraces a complete group of selling helps to fit the needs of every dealer.

The Bevel—that's the thing!

Westinghouse Electric & Manufacturing Company
MANSFIELD WORKS, MANSFIELD, OHIO

Sales Offices in All Principal Cities of the United States
and Foreign Countries.

The Bevel—



That's the thing!



It gets into frills!



It gets under buttons!



It lets you see your work!

Westinghouse

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

electricity as a source of industrial power.

Florida Meeting

The Florida Association of Electragists met on March 19 at Orlando with upwards of a hundred in attendance. The meeting was called to order at one p. m. and every feature of the program was interesting and profitable to all present.

Valentine Window Contest

Prize Competition a Big Feature Among Electrical Dealers

The third window trimming contest of the Benjamin Electric Manufacturing Company, featuring its two-way plugs, held during Valentine week, was successful in view of the large number of contestants. Nearly twenty six hundred electrical retailers were entered, and a greater number of photographs were sent in than was the case with either the Halloween or the Thanksgiving contest similarly held.

That the idea of featuring an electrical valentine was a particularly good one and tied in with the imagination of the dealer was demonstrated by the very ingenious way in which the window trimming material supplied by the company was utilized. It was the consistent comment of the judges that never in connection with any other window trimming contest before were there so many splendid windows turned in and so much originality and ingenuity displayed. The idea of an electrical valentine was evidently very popular with the man in the street, based on the extraordinary increases in sales of appliances and two-way plugs during the week the display was in evidence.

The Cope Electric Company of Santa

Ana, Cal., who featured Barney Google's Spark Plug made up entirely of Benjamin two-way plugs, reported an increased sale of the plugs of over three hundred percent.

The Electric Service Company of Dodge City, Kansas, received a special mention of its window display in the daily paper, although there were several other competitive window contests running in the city during that week.

The Miller Electric Company of Kalispell, Mont., who had a well arranged window, reported large increases in the sale of Benjamin two-way plugs.

A. W. Parsons of Portland, Ore., reported a considerable increase in business and stated that they had sold a two-way plug with every appliance going out of the store during the week.

The City Electric Company of Portland, Ore., had another fine window and reported an increase of twenty percent in its sales of Benjamin two-way plugs.

Another splendid window was that of the City Light and Power Company, Amarillo, Tex., who reported many favorable comments on its window and a doubling of its sales.

A cleverly arranged window was that of the Interstate Public Service Company of Indianapolis, Ind. This company made a record sale of plugs in the previous contests and outdid this record in the Valentine competition.

The photographs of the windows were judged entirely upon their merits from the points of view of originality, artistic appearance and sales inspiring value. It is singular that after the selections were made upon this basis, that among all of the entries submitted those in the prize money attested the greatest increase in sales of both two-

way plugs and appliances. This is a remarkable demonstration of the pulling power of a good display, the effectiveness of which is in direct proportion to the originality, artistic appearance and sales inspiring effect which it produced on the man on the street.

The company announces the following prize winners among the dealers:

First, \$100—Interstate Public Service Co., Connersville, Ind., Harry E. Tobey, manager; second, \$75—Electric Construction Co., Little Rock, Ark., decorator, Paul F. Denson; third, \$50—Public Service Co. of Colorado, Denver, Colo., A. B. Spencer, decorator; fourth, \$25—Scott, Lyman & Stack, Sacramento, Cal., L. McGinnis.

Prizes of \$10 each: Robert Berndt Electric Shop, Huron, S. Dak.; City Light & Power Co., Amarillo, Texas, Eugene T. McSpadden; Consumers Electric Light & Power Co., New Orleans, La., Ernest C. Hunt; City Electric Co., 306 Oak St. Portland, Ore., C. P. Scott; A. W. Parsons, Portland, Ore.; Knecht, Feeney Electric Co., Mt. Vernon, Ohio, Miss E. M. Zinc, decorator; Miller Electric Co., Kalispell, Mont., Miss Esther Haugen; The Electric Service Co., Dodge City, Kans., Louise Wolfe; Cope Electric Co., Santa Ana, Cal., J. E. Cope, and New Bedford Gas & Electric Light Co., New Bedford, Mass.

New Steinmetz Book

"Steinmetz and His Discoverer" is the title of a 24 page booklet just published by Robson & Adey, Schenectady. The booklet was written by John T. Broderick, an early associate of Doctor Steinmetz in the General Electric Company, and at present employed there. He is also author of "Pulling Together," a book on industrial relations, containing an introduction by Doctor Steinmetz.

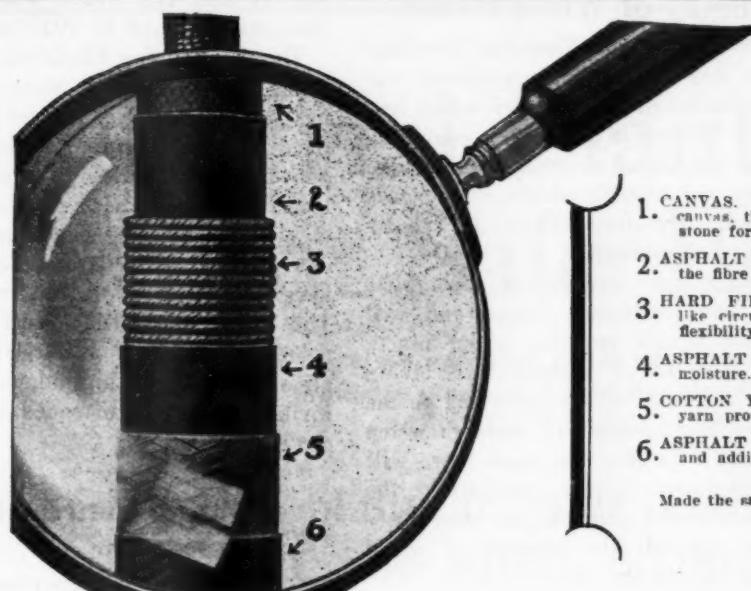
Mr. Broderick points to E. Wilbur Rice, Jr., as the discoverer of Steinmetz, and their meeting in a Yonkers workshop thirty years ago is described. An outline of the growth of the electrical industry during the past twenty years follows as a prelude to Mr. Broderick's description of the influence of the two men on electrical progress.

Community Exhibits

Based upon the experience gained by the Edison Electric Illuminating Company of Boston in the conduct of community electrical exhibits, which have been reported in these columns from time to time, the Society for Electrical Development has prepared a preliminary draft of a plan to assist in the organizing and conducting of such exhibits. After refinement, this plan will be made available to electrical leagues and other local co-operative organiza-



The Interstate Public Service Company, Connersville, Indiana, Harry E. Tobey, Manager, Was Announced the Winner of the First Prize. This Display Won the Laurels



1. CANVAS. Inner lining—glue sized hard finished canvas, the inner surface lubricated with soap-stone for easy fishing.
2. ASPHALT COMPOUND. Binds the canvas to the fibre cord.
3. HARD FIBRE CORD. The Helix—gives rib-like circumferential rigidity with longitudinal flexibility (like a coiled spring).
4. ASPHALT COMPOUND. For protection against moisture.
5. COTTON YARN. Outer jacket—braided cotton yarn protects against abrasion and wear.
6. ASPHALT COMPOUND. Finish—fire resisting and additional moisture protection.

Made the same way in 12 sizes from 7/32nd inch to 2 1/4 inch in diameter.

"Inside information" on Alphaduct Construction

A magnified view of a cut-away section of ALPHADUCT.

ALPHADUCT is so constructed to give the best possible protection against moisture, fire, and abrasion to the insulation on electric wires

The description explains the composition and purpose of each layer.

All 7/32 inch ALPHADUCT supplied in the "4 in 1" carton, five Standard Shipping cartons—four inside of one. The inner cartons each contain one standard coil.

Other sizes up to one inch individual cartons of one coil each.

ALPHADUCT COMPANY

136 CATOR AVENUE, JERSEY CITY, NEW JERSEY



ALPHADUCT'S
packing is a service
added to the Standard
of ALPHADUCT
Quality.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

tions and individual companies at a nominal charge.

As an experiment, the Society has also obtained certain standard equipment which it is making available at a rental charge to central stations throughout the New England States. This work is being carried out in co-operation with the Contact Bureau of the New England Section, National Electric Light Association, under the direction of H. B. Gilmore, chairman. Already four community electrical exhibits are planned at which this standard equipment will be used, namely, in Pittsfield, Mass., Manchester, N. H., Portland, Vt., and Portsmouth, N. H.

Convention Dates

A catalog of convention dates supplied by the Society for Electrical Development for the months of April and May is as follows:

- April*
- 2-3 Association of Iron & Steel Electrical Engineers, Pittsburgh, Pa.; Fuel Saving Conference.
 - 7th New England Division, N. E. L. A., Merchandising Bureau, Boston, Mass.
 - 7-8 National Safety Council, Engineering Section, San Francisco, Cal.
 - 7-10 American Institute of Electrical Engineers, Birmingham, Ala., Spring Convention.
 - 9-12 Middle West Div., N. E. L. A., Kansas City, Mo. (2nd Annual Convention.)
 - 9-12 Missouri Assn. of Public Utilities, Kansas City, Mo.
 - 10-12 Missouri Assn. of Public Utilities, Kansas City, Mo.
 - 15-17 Southeastern Water & Light Association, Piedmont Hotel, Atlanta, Ga.
 - 16-17 National Radio Conference, Waldorf Astoria Hotel, New York, N. Y.
 - 17-18 Wisconsin Utilities Association, Hotel Pfister, Milwaukee, Wisc.
 - 19-26 "Own Your Home" Exposition, 69th Regiment Armory, New York.
 - 21-26 Conference for Electric Metermen, University of Florida, Gainesville, Florida.
 - 22-25 Southwestern Public Service Association, Geographic Division of N. E. L. A., New Orleans, La. (Joint Meeting with Southwestern Public Service Association.)
- May*
- 2nd Vacuum Cleaner Mfrs. Association, New York City.
 - 5th New England Division, N. E. L. A., Merchandising Bureau, Boston, Mass.
 - 5-6 Wyoming Utility Association, Cheyenne, Wyoming, (Annual Convention) also Joint Quarterly Session, Rocky Mt. Div. N. E. L. A. & Committee of Public Utility Information.
 - 8-9 Nebraska Section, N. E. L. A., Omaha, Nebr.
 - 12-13 Florida Engineering Society, Orlando, Florida.
 - 19-23 National Electric Light Association, Atlantic City, N. J. M. H. Aylesworth, 29 West 39th St., New York City.
 - 22-23 National Electrical Credit Assn., Congress Hotel, Chicago, Ill.
 - 26-29 The Electric Power Club, Sea View Golf Club, Absecon, N. J.

Survey of Wired Homes

The Society for Electrical Development has practically completed the compilation of statistics of wired and unwired homes in the various communities in the United States, preliminary to getting out its fifth edition of the publication heretofore known as "Customers vs. Population".

This edition will be more complete than any previously issued and will contain figures covering about ninety eight percent of residences receiving electric service which according to the survey now amount to more than ten millions. In this new issue there will be included figures comparing the present survey with the one previously made, showing the increase of wired homes in various cities.

Camp Cooperation IV

The next conference of representatives of local electrical co-operative organizations will be held at Association Island, Henderson Harbor, New York, September 2 to 6. The industry is familiar with the excellent results attending conferences, Camps Coöper-

tion II and III, which were held at Association Island in 1922 and 1923.

The Society for Electrical Development, which sponsors these meetings, has notified electrical leagues and other local co-operative organizations of the above dates and already a number of reservations have been made. Officials of electrical leagues should mark these dates on their calendars and arrange to have at least one representative present. The attendance will consist of men delegates by local electrical co-operative organizations and others to whom invitations may be extended by the Society.

Lighting Course Held

Seventy seven live wire, ambitious men learned the fundamentals of selling lamps and lighting at the Ninth Illumination Design course recently held at Nela Park. These men, representing a cross section of the electrical industry, knew that there is more to the lighting business than mere selling of lamps. They knew that if they were qualified to design and specify good lighting for a customer instead of selling lighting equipment for a hit and miss installation, they would increase their sales and build everlasting goodwill for their customers. They knew that if they understood the fundamental principles in the procedure of selling lighting they would again add to their ability to swing the sales curve sharply upward. And after having attended the Design School, they are now better prepared to fulfill these requirements which will help them in their various fields.

The list of registrants to the course included men representing central stations, jobbers, jobbers' salesmen, dealers, lighting equipment manufacturers and other electrical interests as well as nine members of the International Lighting Mission.

The course is given periodically three times a year. Lectures and demonstrations covering theory and principles of lighting are given by recognized authorities in each field. Typical factories, offices and stores are visited and lighting layouts are designed for them. Theory and practice are thereby joined to give a thorough training to the student. Street lighting, sign lighting and automobile lighting are also studied and demonstrated.

Having obtained a working knowledge of illumination, the student has



The Princess of Light Standing Beside a Replica of the Public Service Company of Colorado's Building in Denver, One of the Attractive Features of the Recent Industrial Exposition Held in That City. Miss Lois Herrick of the Company as the Princess was a Prize Winner in the Revue

Industrial Plants Want Safe Equipment

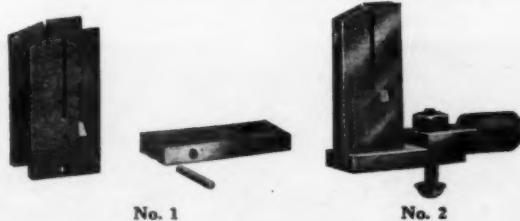
Therefore industrial plants are among the most profitable prospects for the live electragists to sell
"CIRCLE T" SAFETY SWITCHES

If industrial plants in your territory are not getting the best and safest equipment then you have not made them acquainted with it

It is a fact that 90 per cent. of the various forms of punched clip switches in use today in industrial plants subjected to severe usage or operated under inductive load are misfits. This condition is existent because the engineers do not realize the necessity for Type "A" construction.

There are two distinct types of switches available for industrial plant installation. One is a punched clip switch which gives satisfactory service when infrequently operated or used for entrance work. The second type is a machine-made Type "A" Safety Switch, quick make and quick break, which will stand up and give perfect service under inductive load and which can be operated any number of times a day and stand up.

The electragist who understands the difference between a real Type "A" Switch in a Class A box and a punched clip switch in either a Class A or Class B box, can render a real service to industrial engineers. Electragists possessing such knowledge are on the right road to more switch sales and a closer tie-in with industrial plants.



Cut No. 1 shows separate parts of contact block: the milled foot block with hole drilled, pin that is inserted after blades are sweated into the foot block.

Cut No. 2 shows milled contact block complete with lug. Fingers sweated in to footblock and pinned.



Spring on quick make, quick break Type "A" switch has endured the severest kind of tests. We plan to work such springs not more than 50 per cent. of their capacity, thus ensuring long life and positive action.

Send Today for "Circle T" Bulletin No. 5



The Trumbull Electric Manufacturing Co., Plainville, Conn.

NEW YORK
114 Liberty St.
BOSTON

CHICAGO
2001 W. Pershing Rd.
PHILADELPHIA

SAN FRANCISCO
595 Mission St.
ATLANTA



THE INDUSTRIAL STANDARD FOR MORE THAN TWENTY YEARS

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

effective sales ammunition at his command. Lectures embracing merchandising principles, advertising, and selling are given which instruct the student as to how to use the sales ammunition which he has acquired. Contracts, sales rules, surveys of the various markets and the methods of developing them are discussed in lectures with a view to aid every man in his particular field to expand his business.

The newly completed demonstration rooms at Nela Park were used for the first time by this school. Containing the whole lighting story in a nut shell, the demonstrations in these rooms helped those attending the course to visualize the facts and principles brought out in lectures as could be accomplished in no other way.

The entrance to the demonstration rooms leads into a reception room or lounge. Adjoining this room is a class room which is equipped with special demonstration lighting fixtures, a stage for demonstration purposes, tables equipped with individual drawers for each student's books, paper and working materials, and demonstration booths along the sides of the room showing the most up-to-date lighting equipment. Individual rooms containing equipment for demonstration industrial lighting, home lighting, street lighting, automobile lighting, show window lighting, sign lighting and sales helps enable the visitors to obtain in a short time a most comprehensive idea of the modern methods of lighting and the benefits from good lighting as contrasted with bad lighting.

It is sometimes quite difficult to picture the immense possibilities of light

as applied in the various fields and these demonstration rooms serve admirably to span the gap between imagination and realization.

News Notes Concerning Electrical Contractor-Dealers

Business Changes, Store Improvements, and New Establishments Opened

D. M. Palmer has opened an electrical supply store at 2317 East Sixteenth Street, Los Angeles, California.

Lynn Electric Corporation will conduct an electrical supply business at Lynn, Massachusetts. Incorporated capital, \$10,000. Incorporators: J. H. Faulkner, 63 Middlesex Avenue, Swampscott, Massachusetts, and others.

Kentucky Utilities Company is locating at Carlisle, Kentucky, where a complete line of electrical supplies will be carried.

Samuel H. Deering, Incorporated, has established headquarters at Portland, Maine, where an up-to-date line of electrical merchandise will be handled. Incorporated capital, \$10,000. Incorporators: S. H. Deering, South Portland, and others.

Elconins Electrical Company announces its opening at 881 East 105th Street, Cleveland, Ohio.

Fidelity Electric Shop of which Wade Smith is proprietor, is engaged in the electrical supply business at 507 Jackson Street, Chillicothe, Missouri.

Newark Electric Company is conducting an electrical supply business at 226 West Madison Street, Chicago, Illinois. Incorporated capital, \$10,000.

Incorporators: H. R. Wakam and others.

M. F. Prine has opened an electrical and radio supply store at Hugoton, Kansas.

Biloxi Electric Company will conduct an electrical supply business at Biloxi, Mississippi. Incorporated capital, \$15,000. Incorporators: W. A. Sullivan and others.

A. W. Rogers announces the opening of an electrical supply store at the Gammon and McKnight Building, Clinton, Massachusetts.

Marion Electric Company has established headquarters at Marion, Ohio. Incorporated capital, \$15,000.

Electric Service Company is engaged in the electrical supply business at 109 West Elm Street, Urbana, Illinois.

Hale Electric Company will conduct an electrical supply business at Pasadena, California. Incorporated capital, \$25,000. Incorporators: E. H. Hale, 800 South Marengo, Pasadena, and others.

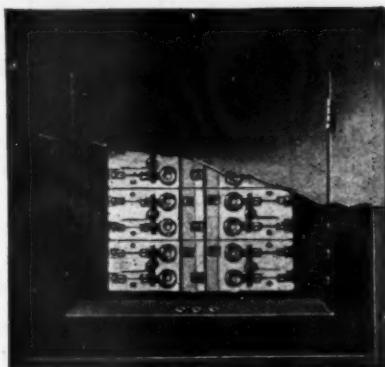
Topeka Edison Company is opening an electrical appliance department at 808 Kansas Avenue, Topeka, Kansas.

Electric Service & Supply Company, Incorporated, has established headquarters at Greenville, North Carolina. Incorporated capital, \$25,000. Incorporators: C. F. Hardes, Greenville and others.

Electrical Service Company announces its opening at 2115 Gallia Street, Portsmouth, Ohio, where an extensive line of electrical and radio supplies will be carried.



Many Electrical Men From Every Branch of the Industry Attended the Ninth Illuminating Design Course Recently Held at Nela Park. Left, Street Lighting Conference Room; Right, Corner of Room Where Demonstrations in Industrial Lighting Were Given

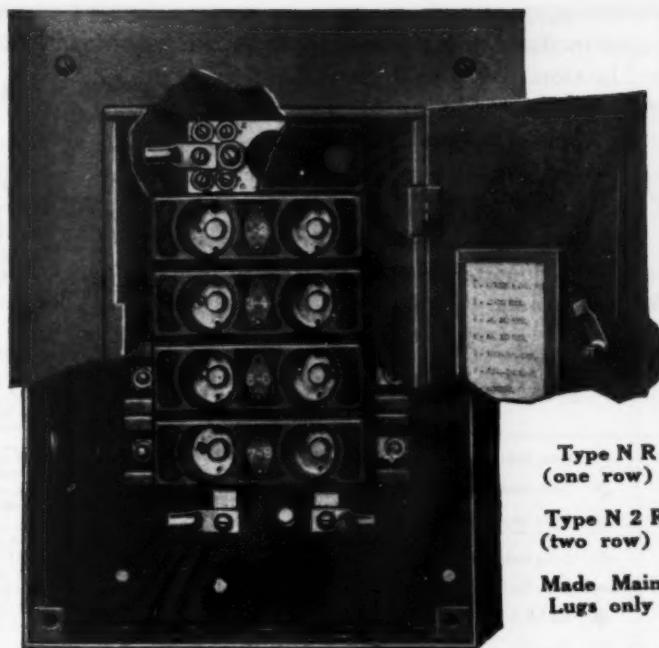


COLE

Enclosures for Every Electrical Requirement
Cutout Boxes, Cabinets, Junction
Pull Boxes, Conduit Fittings

Write for Your Copy
of Our New Catalog

COLE METAL PRODUCTS CO., Inc.
330 East 23d St., New York City



Type N R
(one row)

Type N 2 R
(two row)

Made Main
Lugs only

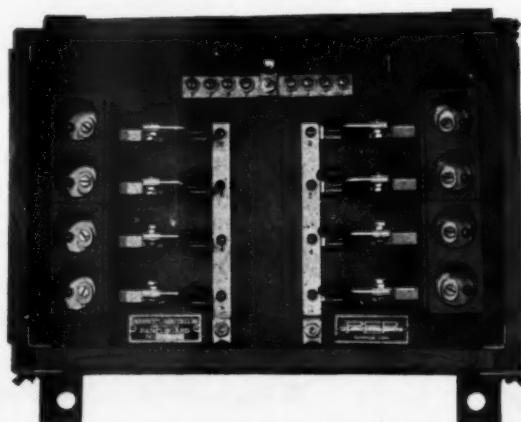
THE FIRST SINGLE FUSE PANELBOARD THE NEW FA TYPE N R

Rule 807, paragraph "b," 1923 National Electric Code, permits under specified circumstances the above type of panelboard using a single fuse in the branches.

It is our pride to be first with a practical, high-quality, low-cost panelboard to fit this condition, and to announce herewith the new **FA** Type N R (shown above) and Type N 2 R (two row construction) both in stock and ready for shipment. These are new members of the well known **FA** line of Triumph Safety Type Unit Constructed Panelboards and are sure to fulfill every requirement.

Send for description, details and prices.

1923 CODE PANELS SAVE MONEY



Send in Your Specifications for New Work or Jobs Not Started. IT WILL PAY YOU IN DOLLARS to Make Use of Our Knowledge, Experience and Service.

We are now delivering 3-3 and 3-2 Live and Dead Front Panels, 1923 Code. The cost is less.

**SWITCHBOARDS—PANELBOARDS
FUSE-REDUCERS**

THE PLAINVILLE ELECTRICAL PRODUCTS CO.
PLAINVILLE, CONN.

Frank Adam
ELECTRIC COMPANY

ST. LOUIS

District Offices:

Detroit, Cincinnati, New Orleans, Dallas,
Minneapolis, Kansas City, Indianapolis,
Los Angeles, San Francisco, Philadelphia,
Denver, Seattle, Chicago, Pittsburgh,
New York City.

Other Products

Major System of Theater Lighting
Control; knife switches; safety
switches; hanger outlets; reversi-
ble-cover floor boxes; A. C. and
D. C. Distribution Switchboards.



ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

C. D. Barker Electric Company is engaged in the electrical supply business at Jackson, Michigan. Incorporated capital, \$25,000.

Warren Electrical Company has opened a new store at 5 Bridge Street, Paterson, New Jersey.

Watson Electric Company has established headquarters at Rocky Mount, North Carolina. Incorporated capital,

\$25,000. Incorporators: V. S. Watson, Rocky Mount, and others.

Service Appliance Company, Incorporated, in the electrical appliance business at Schenectady, New York, has leased a store in the Wood Building, North Street, Pittsfield, Massachusetts, and is open for business.

Lycoming Edison Electrical Company will conduct an electrical appli-

ance business at Williamsport, Pennsylvania. Incorporated capital, \$25,000. Incorporators: Harry S. Orth, 415 Howard Street, South Williamsport, and others.

The Electric Maid Shop of which J. F. McCullough, Jr., is proprietor, announces its opening at 417 George Street, New Brunswick, New Jersey. A complete line of electrical supplies and appliances will be carried.

A. D. Whitson has opened an electrical supply store at Pulaski, Tennessee.

Reliance Electric Company is engaged in the electrical supply business at Camden, New Jersey. Incorporated capital, \$50,000. Incorporators: Wm. D. Lippincott, 35 North Fourth Street, Camden, and others.

E. P. Kinney is locating at 117 East Ottawa Street, Lansing, Michigan, where an electrical supply store is being opened.

Coney Island Radio Shop will feature an extensive line of radio and electrical supplies at 1016 Coney Island Avenue, Brooklyn, New York.

Hinckley Electric Company has established headquarters at Osterville, Massachusetts. Incorporated capital, \$50,000. Incorporators: L. Hinckley, Osterville, and others.

Neer Bros. Electric Shop is open for business at 300 South Summit Street, Arkansas City, Kansas.

The O. K. Electric Company will conduct an electrical supply and appliance business at 175 Smith Street, Perth Amboy, New Jersey. Incorporated capital, \$100,000. Incorporators: S. Kauffman, 175 Smith Street, Perth Amboy, and others.

G. W. Nottley has opened an electrical supply store at 12942 Michigan Avenue, Springwells, Michigan.

Window Display Prizes

Five cash prizes totalling \$135 are offered by the P. A. Geier Company of Cleveland for window displays featuring cleaners made by that company. It is a condition of the competition that the photographs submitted must be based upon display material furnished by the company in connection with its spring housecleaning sales campaign which will culminate in Royal week, April 28 to May 3. Competition closes May 10.

New Standard Wiring Symbols



As announced in these columns last month, the revision of the Standard Wiring Symbols has been completed and the new symbols are now released by the American Engineering Standards Committee, as shown above. The Association of Electragists, as one of the sponsors, is also mailing copies of these new symbols to the membership.

Concerning a Product and a Trade Mark—

WIRING



DEVICES

The idea back of the "DIAMOND H" Trade Mark—

THOROUGHNESS — QUALITY — SERVICE

Thoroughness in design, materials and construction can alone produce quality. Nothing but quality can give service. Nothing but a service-giving capacity can create a permanent and growing business.

In the "Diamond H" trade mark this company has aimed to symbolize the utmost of value to the electrical contractor.

THE HART MANUFACTURING COMPANY

HARTFORD, CONN.

NEW YORK
CHICAGO

BOSTON
LOS ANGELES

DETROIT
CLEVELAND

DENVER
LOUISVILLE

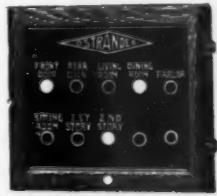
TORONTO,
CANADA



Gravity Drop



Needle Drop



Target Drop

HOUSE ANNUNCIATORS

OSTRANDER



ANNUNCIATORS

Our Annunciators have stood the test of over 30 years of exacting service. We also manufacture Hospital; Lamp, Burglar Alarm, and Fire Alarm Types. They are designed to operate on battery or transformer current, and can be supplied with wood or metal cases.

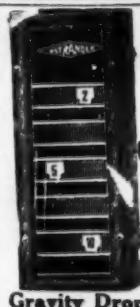
Our Engineering Department is prepared to design any Special Annunciator to comply with your requirements.

W. R. OSTRANDER & CO.

MAIN OFFICE:
371 Broadway,
New York

FACTORY:
83-89 Clifton Place,
Brooklyn, N. Y.

ELEVATOR ANNUNCIATORS



Gravity Drop



Needle Drop



Target Drop

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

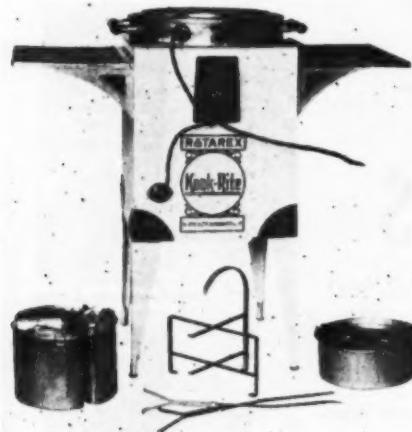


Improved Model Kook-Rite

A number of changes have been made in the new Kook Rite, manufactured and distributed by the Apex Electrical Distributing Company of Cleveland, which improve its service and reduce to the minimum the likelihood of trouble developing.

The body is of heavy gauge sheet steel and porcelain enamel. It is fifteen inches square and thirty-two inches high from the bottom of the legs to the top of the cover. Instead of being fastened on by screws the shelves are easily detachable by lifting them up.

The top part of the stove is made of heavy gauge sheet aluminum, locked to the upper edge of the well. The insulation between the well and the container consists of two inches of mineral



wool. There are two heats, one of 250 watts and the other of 410 watts. Nichrome wire is used for the heating element and is doubled and thoroughly insulated.

The timer is a special clock movement so constructed that the complete circuit of the dial is effected in just two hours.

Baby Denzar Unit

Believing that many housewives object to enclosed units for the kitchen because of the desire to use the socket as a convenience outlet, the Beardslee

Chandelier Mfg. Co. of Chicago has just placed on the market a new luminaire.

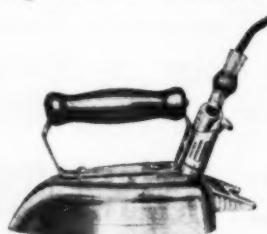
This new unit is known as Type P.



S. Baby Denzar, which it is claimed has all the advantages of the standard unit of this name. The button projecting from the side of the plug in switch controls the light, while a convenience outlet in the bottom of the switch furnishes current for the electric iron, toaster, or whatever other appliance the housewife may wish to use.

Simplex Electric Iron

A new iron has been brought out by the Simplex Electric Heating Company, Cambridge, Mass. Enclosed coil ni-



chrome heating element is used, and one of its features is an all steel plug.

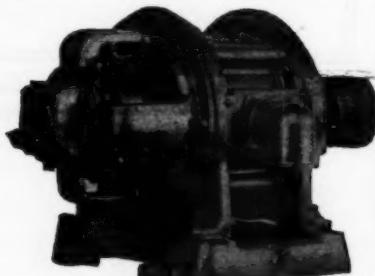
A Bakelite ball grip on the anti kink spring provides a convenient means of

connecting and disconnecting the iron. In combination with the spring which connects it to the plug the ball grip assures a quick break of the circuit when detaching the iron. This eliminates excessive arcing and prolongs the life of the contacts.

An air cooled stand serves to insure garments against scorching, and air cooled terminal guards keep the plug and contacts cool.

Two New Motors

The Western Electric Company offers two new lines of motors, namely, single phase motors, type SCR, adaptable to a wide range of industrial applications and a line of continuous duty



riveted frame polyphase motors, redesigned types, KT and KQ.

SCR Motors start as repulsion type and operate on the squirrel cage induction principle which entirely eliminates the short circuiting switches heretofore considered essential. They combine high starting torque with low starting current. Operating character-



istics are similar to those of the induction motor. Both maximum and accelerating torque approximate 200 percent of full load torque without any low points during acceleration.

The KT polyphase motors form a

Rubber Insulated Wires and Cables



National Electrical Code Standard
Intermediate (Red) Thirty Per Cent

Wire built under the direct supervision of experienced engineers, skillfully and honestly manufactured with one purpose and result.

Continuous Service

A-A WIRE CO., Inc.
FACTORY: NEWARK, N. J.

Sales Offices: 110 East 42nd Street,
New York City

PARANITE

RUBBER COVERED WIRES AND CABLES

The Standard for THIRTY-THREE Years



For all purposes. Inside, Outside, Aerial,
Underground and Submarine Use.

IF IT'S **PARANITE** IT'S RIGHT

INDIANA RUBBER & INSULATED WIRE CO.
JONESBORO, INDIANA

New York Representatives:

The Thomas & Betts Co.,
63 Vesey St., New York City

Chicago Branch:

Indiana Rubber & Insulated Wire Co.
210 Marquette Bldg., Chicago.

Strength

is first and foremost of all considerations entering into the construction of

'UNION' RENEWABLE FUSES

No other fuse is built so ruggedly. No other can be renewed so quickly. That explains why no other fuse withstands so many blowouts and why the

"UNION" Saves More than ANY
Other Renewable Fuse

At Leading Dealers and Jobbers

Write for Catalog

CHICAGO FUSE MFG. COMPANY

Manufacturers also of
Switches and Outlet Boxes,
Cut-Out Bases, Fuse Plugs,
Fuse Wire and Automobile
Fuses.

CHICAGO NEW YORK

REG.U.S.
PAT.OFF.



new and complete line. They are 40 degrees, continuous duty riveted frame. Sizes up to 15 h.p. The electrical improvements comprise reduced heating, higher efficiency, higher power factor at full and fractional loads, and increased starting torque.

The principal mechanical changes include, between 50 and 100 percent increase of oil reservoir capacity, a new method of directing ventilating air which assists cooling and prevents dirt settling on the windings and a "cast" one piece rotor without joints or high resistance spots.

Wire Fittings for Radio

An assortment of wire fittings for radio just placed on the market by the H. B. Sherman Mfg. Company of Battle Creek, Michigan, contains terminals for use in building radiosets and wire fittings for installing them. Fixture



connectors are included, which makes connections between wires without soldering. The assortment comes in a handsome display box, and the price of each article is plainly marked.

Induction Time Relay

A new type of induction time delay overload relay, to be known as the IA-201, has been placed on the market by the General Electric Company. The contact mechanism of this relay is of an improved design. The contacts



themselves cannot be closed by vibration or jar. A target is provided to indicate that the relay has operated.

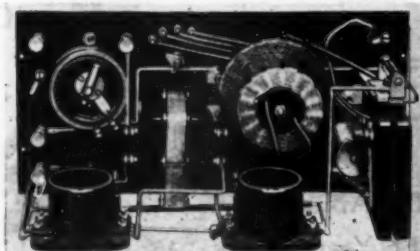
The stationary contacts are two phosphor bronze flexible fingers with silver

tips, spaced horizontally one above the other on an insulating block. Carried on the gear which meshes with the pinion on the disc shaft is a small insulating block supporting a silver plate which bridges the two contact fingers and closes the contact circuit.

This silver plate is pivoted at the center, allowing it to adjust itself to the contacts, and thus remove any possibility of failure to close because of misalignment of the contact fingers. The gear also carries a small armature which is attracted and held by a coil in series with the contact circuit, thereby insuring good contact until the tripping circuit is interrupted by some external means.

New Two Tube Receiver

The New Crosley Model 51 set, which sells for \$18.50—rear view here illustrated—consists of a detector using the Armstrong regenerative tuning and detector circuit, with the addition of one stage of audio frequency amplification. This makes it possible to use a loud speaker upon local stations or with



stations that have exceptionally high power transmitters.

One multistat takes care of both filament voltages in the two tubes used. Provision is made for a C battery and a grid leak if the owner desires to use them. A two step audio frequency amplifier may be used in connection with this set. Production of this set reached over 500 a day within twenty four days after the set was made from a suggestion by Powel Crosley, Jr., who conceived the idea while on a hunting trip in Tennessee.

Condensed Notes of Interest to the Trade

To aid dealers, contractors and central stations in the sale of commercial lighting units, the F. W. Wakefield Brass Company of Vermilion, Ohio, has issued a new folder descriptive of Red Spot Hangers equipped with various popular urn shaped glassware.

The American Steel and Wire Company of Chicago is undertaking an almost complete electrification of its three plants in Worcester, Mass., where special products of the corporation are manufactured.

Killark Electric Mfg. Company of St. Louis announce new sales agencies as follows: E. G. Hohs, 155 Colbeck St., Toronto, Ontario—province of Ontario; G. L. MacGillivray & Co., Ltd., 3 St. Nicholas St., Montreal, Quebec—province of Quebec; and George G. Young & Co., Bourse Building, Philadelphia—Eastern Pennsylvania, Southern New Jersey and Delaware.

A new catalog on Industrial Safety Type Switchboards has been issued by the Mutual Electric and Machine Company of Detroit. It is attractively printed and is profusely illustrated with carefully planned halftone views.

Henry D. Sears announces that a stock of Weber Wiring Devices is now being carried in Chicago at 131 South Desplaines Street, corner of West Adams, in order to better serve the western trade. Paul J. Cratty has been made western manager at this address.

Joseph H. Schmidt, who for the past five years was attached to the Radio Testing Laboratory at Washington, D. C., Navy Yard, has joined the staff of C. Brandes, Inc., of New York City.

As of March first the General Electric Company moved the headquarters of its central district from Cincinnati to Cleveland.

Efforts recently have been made by the Apex Electrical Distributing Company of Cleveland to obtain the return of old cleaners of any make as part payment on new cleaners of its manufacture. The public is being appealed to through popular magazine advertising and the trade through direct mail and advertising in its own trade papers.

A catalog has been issued by Partrick & Wilkins Company of Philadelphia on Low Voltage Systems for use in hospital nurse calls, school houses, Y. M. C. A.'s, hotel and house telephones, hotel return calls, and emergency gong fire alarms.

In order to increase production to meet the demand for radio headsets and loud speakers, Brandes Products Corp., a subsidiary of C. Brandes, Inc., New York City, has started an addition to its factory in Newark, N. J.

RAVEN CORE—A Rubber Covered Wire of Distinction!

Made by a house of standing.

Specified by all the leading architects.

Used by the Contractors who do the better grade of work.

Can you afford to overlook it?

NEW YORK INSULATED WIRE CO.

Main Office: NEW YORK

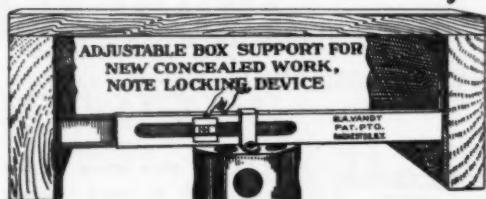
Factory: WALLINGFORD, CONN.

DENVER

Agencies and Branches:
LOS ANGELES

CHICAGO

BOSTON



NO MEASURING OR SAWING
FOUR NAILS AND A HAMMER SETS
THE BOX ALLOWING FOR LATH
AND PLASTER.

ANY MAKE OF BOX CAN BE USED.

Our "ALL IN ONE" Covers are something new and saves
carrying a variety of covers in stock.

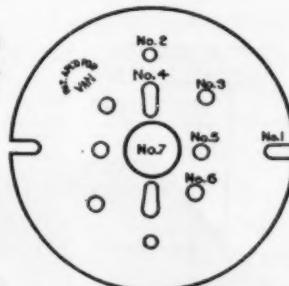
HAVE VANDY EXPLAIN TO
YOU WHY HIS FITTINGS COST
YOU NOTHING.

ASK YOUR JOBBER.

Manufactured By

B. A. VANDY

187 No. Water St. ROCHESTER, N. Y.



NEEDLE ANNUNCIATORS
Hotel, House, Car Marine, Elevator
Automatic
Self-Restoring
Individual Set-Back
Return Call Systems
Telephone Systems
Fire Alarm Systems
Hospital Systems
Apartment House Systems
Etc., Etc.

Annunciators and Electrical House Goods

Manufactured by

PATRICK & WILKINS CO.

Established 1867

51 N. Seventh Street,

Philadelphia

*Our Annunciators and House Goods in Stock
and for Sale by Dealers Everywhere*



Know Where You Stand

By Adopting the
New Standard Accounting System

This simple and accurate accounting system is endorsed by practically all of the branches of the electrical industry. It conforms with the accounting systems adopted by other electrical organizations; it is flexible and economical; it is easy to operate, accurate and quick working.

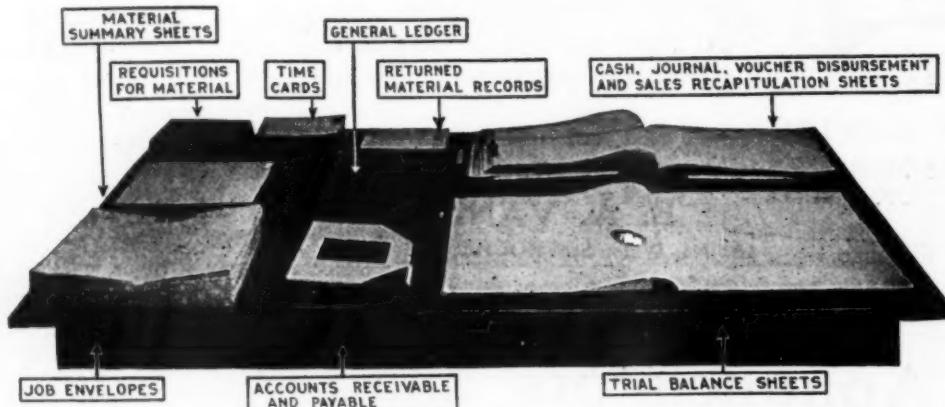
**For Contractors—For Dealers
 For Contractor-Dealers**

Adopted and Issued by the

Association of Electragists
INTERNATIONAL

Sold to Members or Non Members

You should always be able to answer these three questions accurately and instantly:



Here is the complete working set, just as it looks, and the whole outfit when spread out for exhibition no more than covers the top of a table.

- (1) Do you know at the end of each month your net profit?
- (2) Do you know that your annual inventory is accurate?
- (3) Can you quickly and accurately make your income tax report from your books?

FULL INFORMATION SENT UPON REQUEST BY THE

ASSOCIATION OF ELECTRAGISTS—INTERNATIONAL
 15 West 37th Street, New York City

The New Business Record is recommended to contractor-dealers who do their own bookkeeping.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST



The Contractor

wants a conduit with clean threads and smooth interiors so that he can install and fish it easily. And for the sake of his customer he wants a conduit protected from rust.

Clifton Conduit

Enameled or Galvanized,

is a practical conduit exactly suited to the contractor's needs. It is made from high-grade steel pipe carefully enameled or galvanized to protect it from corrosion. And the threads are sharp.

Clifton Manufacturing Co.

BOSTON, 61 Brookside Ave. 30
NEW YORK, 26 Cortlandt Street
BUFFALO, 34 Sayre Street
SAN FRANCISCO, 509 Mission Street
CHICAGO, 9 So. Clinton Street
Friction Tape. Splicing Compound.

PITTSBURGH
THREAD PROTECTED
ENAMELED CONDUIT
STANDARD
PATENTED

The Master Conduit

Reaches the job
ready to install!

PITTSBURGH
THREAD PROTECTED
ENAMELED CONDUIT
STANDARD
PATENTED

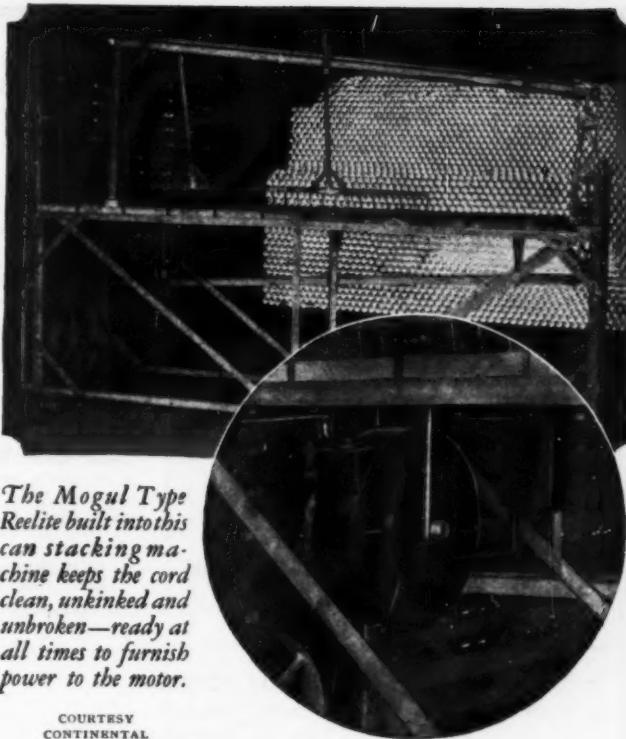
HELPS you do the job quicker
and better. Reaches you all
set to install—threads clean,
true and sharp, coated with just
enough enamel to protect from
rust.

Costs no more than ordinary enameled
conduit. The time it saves
gives you an extra margin of
profit.

ENAMELED
METALS CO.
PITTSBURGH, PA.

ENAMELED METALS CO.
PITTSBURGH, PA.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST



The Mogul Type Reelite built into this can stacking machine keeps the cord clean, unknotted and unbroken—ready at all times to furnish power to the motor.

COURTESY
CONTINENTAL
CAN COMPANY

True Portability for the Portable Machine

The new Mogul Type Reelite opens new fields for development in portable machinery. This unit can be incorporated in new machines or attached to existing devices to definitely end the worries of portable cord maintenance. There are many situations where bare current conducting rails are not practical from either a safety or operating standpoint. And loose cables dragged over floors, through oil, and under the wheels of trucks always require repair with a loss of operating time for the machine.

The Mogul Type Reelite pays out cord of practically any size and number of conductors and then automatically retrieves it when no longer required. It is furnished with 1" male-threaded hubs for mounting on the machine, and knockout for conduit connection for current supply. Our engineers will be glad to give any information or assistance possible in the adaptation of Reelite to your requirements.

APPLETON ELECTRIC COMPANY

Factory and General Offices
1704 Wellington Avenue
CHICAGO

MOGUL TYPE
Reelite
REG. U.S. PAT. OFF.

Association of Electragists INTERNATIONAL

PRESIDENT, James R. Strong,
526 W. 34th Street, New York City.

SECRETARY AND TREASURER, Laurence W. Davis,
15 West 37th Street, New York City.

GENERAL COUNSEL, Franz Neilson,
New York City.

Executive Committeemen

EASTERN DIVISION
W. Creighton Peet,
70 East 45th Street,
New York City

GREAT LAKES DIVISION
L. G. Ross,
1305 Tower Avenue,
Superior, Wisconsin

PACIFIC DIVISION
C. L. Chamblin,
687 Mission Street,
San Francisco, Calif.

SOUTHERN DIVISION
J. A. Fowler,
118 Monroe Avenue,
Memphis, Tenn.

CENTRAL DIVISION
A. Penn Denton,
17th and Oak Streets,
Kansas City, Mo.

MOUNTAIN DIVISION
E. C. Headrick,
89 Broadway,
Denver, Colorado

EASTERN CANADIAN DIVISION
R. A. L. Gray,
85 York Street,
Toronto, Ont.

WESTERN CANADIAN DIVISION
C. C. Carter,
739 Hastings Street W.,
Vancouver, B. C.

AT LARGE
James R. Strong,
526 W. 34th Street,
New York City.

OPEN SHOP SECTION
Joseph G. Crosby,
140 N. 11th St., Philadelphia.

UNION SHOP SECTION
L. K. Comstock,
21 East 40th Street,
New York City

Past Presidents of the National Electrical Contractors' Association		
Charles L. Eidlitz	1901-1903	Gerry M. Sanborn
Ernest McCleary	1903-1905	*Marshall L. Barnes
James R. Strong	1905-1908	John R. Galloway

*Deceased.

1908-1910
1910-1912
1912-1914
1914-1916
1916-1918
1918-1920

Robley S. Stearnes
W. Creighton Peet

COMMITTEE CHAIRMEN

ARCHITECTS AND ENGINEERS
Clyde L. Chamblin
687 Mission St., San Francisco, Calif.

ELECTRAGISTS' DATA BOOK
J. A. Fowler
118 Monroe Avenue, Memphis, Tenn.

PUBLICATION
Joseph G. Crosby,
140 N. 11th St., Philadelphia

CODE
A. Penn Denton
17th and Oak Sts., Kansas City, Mo.

INTERNATIONAL RELATIONS
R. A. L. Gray
85 York Street, Toronto, Can.

STANDARDIZATION
L. G. Ross
1305 Tower Ave., Superior, Wis.

CONVENTIONS AND MEETINGS
James R. Strong
526 W. 34th St., New York City

LEGISLATION
E. C. Headrick
89 Broadway, Denver, Colo.

TRADE POLICY
(Covering Manufacturers, Central Stations, Jobbers and Merchandising)

COST DATA
Arthur L. Abbott
3649 Bell Avenue, St. Louis, Mo.

LIABILITY INSURANCE
J. A. Fowler
118 Monroe Avenue, Memphis, Tenn.

W. Creighton Peet
70 East 45th Street, New York City

CREDIT AND ACCOUNTING
C. C. Carter
739 Hastings St. W., Vancouver, B. C.

MEMBERSHIP
James R. Strong
526 W. 34th Street, New York City.

U. S. CHAMBER OF COMMERCE
L. K. Comstock
21 East 40th Street, New York City

NEXT ANNUAL CONVENTION, WEST BADEN SPRINGS, INDIANA, WEEK OF SEPTEMBER 29, 1924

THE MARKET PLACE

FOR EMPLOYMENT AND BUSINESS OPPORTUNITIES

RATES:

Situations Wanted, \$1.00 per

inch, each insertion.

Help Wanted, Business Proposals
and For Sale, display type,
\$2.50 per inch, each insertion.

SITUATION WANTED

Superintendent, electrical contractor and estimator seeks connection with well rated concern, either contractor, jobber or manufacturer. Age, 34 years. Married. 15 years experience in city of half million population. Knows electrical contracting including ornamental street lighting and overhead transmission, estimating, selling and handling of men. Address: Box L, c/o THE ELECTRAGIST, 15 West 37th Street, New York City. lt-4

WANTED

By an electrical contractor in a Michigan city, an experienced electrician, who has and can superintend men and electrical installations. Give reference and experience in first letter stating terms wanted to start with. Address: Box K, c/o THE ELECTRAGIST, 15 West 37th Street, New York City.

WANTED

By large electrical contractor in Chicago, a competent young man with some experience in estimating light and power installations. Not necessary to be a technical graduate, but must be rapid and accurate at figures. A good opportunity for a live man willing to work. Apply in own handwriting, giving age, experience, nationality, if of foreign birth or extraction, and salary expected. Address: M. H. Goetz, 215 West Randolph Street, Chicago, Ill. lt-4

Surplus Slow Moving Stocks

Converted into Quick—Immediate—Cash

No stocks too large or small.

Write—Wire—Phone or Call.

State in full detail, the items, quantity of each item and lowest prices acceptable.

THE R-C OUTLET

Executive Offices: 303 Fourth Ave., N. Y. City

Phone: Ashland 1109; Gramercy 1585.

WANTED

Generator 10 to 25 K. W., gasoline or kerosene driven, 110 to 125 volts, with or without charging switchboard and batteries. Write information and price to

Belmont Electric Co.,
906 Sixth Avenue New York City

FOR SALE

Single Phase A. C. Motors

One 7½ H. P., 60 cycle, G. E. motor, 220 volt, 1800 R. P. M.

One 5 H. P., 25 cycle, Century, 110-220 volt, 1400 R. P. M.

D. C. Motors

Two D. C., 110 volt, 18 H. P., elevator motors, in good shape.

One 5 H. P., 110 volt, 1200 R. P. M., D. C. motor, as good as new.

One 2 H. P., 110 volt, 1200 R. P. M., D. C. motor, as good as new.

Two 1 H. P., 110 volt, 1200 R. P. M., D. C. motor, as good as new.

D. C. Generators

One 12 K. W. Ridgway Generator at 750, 125 volt.

One 30 K. W. Ridgway Generator at 600, 125 volt.

CLARENCE W. BECKLEY

100 Liberty Street,
Warren, Pennsylvania

Where to Purchase Lighting Fixtures

READY REFERENCE LIST of Lighting Fixture Manufacturers for the Convenience of Electrical Contractor-Dealers.

CURTIS LIGHTING, INC.

—a grouping of—

NATIONAL X-RAY REFLECTOR CO.
X-RAY REFLECTOR CO. of New York, Inc.
LUMINAIRE STUDIOS, Inc.

New York

Los Angeles

Chicago

Shapiro & Aronson, Inc.

Lighting Fixture Manufacturers



Build your business with S. & A. Standardized Lighting Fixtures in Standardized Finishes. They combine the "made-to-order" look with prices rivaling those offered on ordinary "ready-made" fixtures.

"Notice the Lighting Equipment."

20 Warren Street,

New York City

Insulated wire and cable for every transmission purpose—not made to meet a price, but with the idea of rendering maximum service to the purchaser and of reflecting maximum credit to the contractor who uses it.

Safety Insulated Wire and Cable Co.

114 Liberty Street
NEW YORK

Maxims
for
Merchants
No. 1



THE QUICKEST and most satisfactory profits come from selling people what they want—nationally advertised merchandise.

EDISON
MAZDA  LAMPS

A GENERAL ELECTRIC PRODUCT

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

The Autobiography of a Customer

EPISODE No. 1

In which I knock over the bridge lamp

MY BIRTH as a customer occurred on the day I knocked over the bridge lamp.

I was running the vacuum cleaner over the living-room—and in stepping back, I sent the bridge lamp crashing to the floor. It was Jim's favorite, so I was more than a little upset. Carefully I picked it up and to my delight found that only the bulb* was broken.

A few blocks from the house I found an electrical shop. I walked in and asked for a bulb.* After showing me several which didn't look right, the dealer fished one out which, so far as I could see, was exactly like the bulb* I had broken.

While he was wrapping it, I mentioned that I had never heard of this particular kind before. He said, "These people don't believe in advertising. They put the money into the product instead."

After supper that night I heard from the other room a muttered, "What the —!", followed by Jim's raised voice asking, "What's happened to this lamp?" I dashed frantically into the room and asked what was the matter. "Something seems to have gone wrong with the lamp," he

said, "the blamed thing doesn't give enough light to read by." Then I told him that I had broken the bulb,* but had got a new one. I explained what the man had said about advertising. Jim looked surprised and seemed inclined to laugh. "Don't let anybody kid you about saving money on advertising. Do you know why Edison MAZDA Lamps can be sold so cheaply?" "No," I said. "Because," said Jim, "advertising does the work of an army of salesmen, talking to thousands where a salesman would talk to one. This saves selling expense and creates demand that makes lower manufacturing costs possible through quantity production. How long did it take him to sell you this lamp?" "Oh, about ten minutes." "Well, if it had been an Edison MAZDA Lamp, no explanation or searching would have been necessary. The Edison Lamp Chart would have told at once the lamp you needed. A national advertiser *must* have a good product or his advertising soon becomes a waste of money. Advertising is the best possible guarantee of quality."

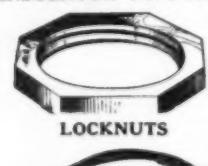
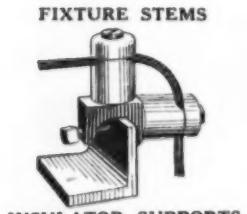
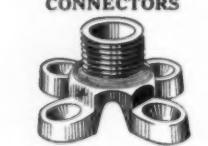
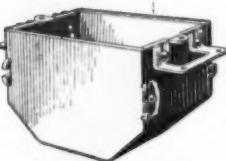
I didn't say anything, but what Jim had said started me on a system of buying, the first and inflexible rule of which is to give preference to the advertised article.

* She meant lamp



ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

Your Reputation



Steel City  **Electric Co**
PITTSBURGH PENNSYLVANIA

1207-1223 Columbus Avenue
PITTSBURGH, PA.

depends upon the quality of wiring materials and workmanship you put into each job.

The better class contractors are realizing more and more the advantages of acquiring a reputation for using quality materials.

YOU can secure higher prices for your work if you demonstrate to architects and owners that it is your regular practice to use dependable wiring supplies.

"STEEL CITY" Products are known everywhere as

THE BEST

See the E M F Electrical Year Book or Mac Rae's Blue Book for the

NEAREST DISTRIBUTOR

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

PROPP GLO-LITE PROPP
Screws into Socket like a Lamp

Beautify Home Fixtures with Glo-Lites

A wonderful New Ornamental Novelty for use in HOME FIXTURES, the lamps furnished with the GLO-LITES are designed to screw into 15 volt, 8 in series, Colored, Red and Orange, giving the beautiful effect of sunset.

Any change of colors can be had with GLO-LITES, using the decorative scheme of the sun at sunset, or design a combination of colors or all Red, Blue, Green, Orange, Faded or Clear Lamps.

AD-A-LITE
The first practical two-colored device made. Constructed for 15 volt and made for exterior.

NO. 520

FOUR-WAY

TAP-SOCKET
THE FIRST PRACTICAL 4-WAY TAP SOCKET - 2 or 8 Way to choose. Inserted in the base of the lamp to use with two separate switches and two lamp connections at the same time.

2-PIECE PLUG
New modern way

ADA-SOCKET
Forwards facing lamp in straight position.

No. 524

1-PIECE PLUG
A simple one piece plug.

Ask Your Regular Jobber About These New PROPP Numbers and Get Their Attractive Prices.

M. PROPP CO. Manufacturers—524-528 Broadway - New York City -

UNIVERSAL ESTIMATE SHEETS

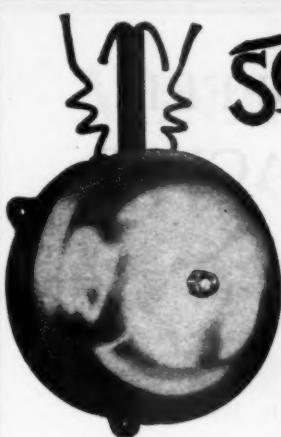
They Simplify Your Estimating

Get a Supply from

ASSOCIATION OF ELECTRAGISTS INTERNATIONAL

Formerly National Association of Electrical Contractors and Dealers.

15 West 37th St.,
New York



SCHWARZE

MONITOR

D. C. and A. C.

**Vibrating
Cyclone Bell**

WEATHER PROOF

Type No. 62 For Direct Current

Type No. 72 For Alternating Current

FURNISHED WITH 8-INCH GONG ONLY

For operation on 250 volts or less Alternating and Direct Current.

Has all terminals and current-carrying parts heavily insulated from frame and securely inclosed in metal case. For multiple operation only.

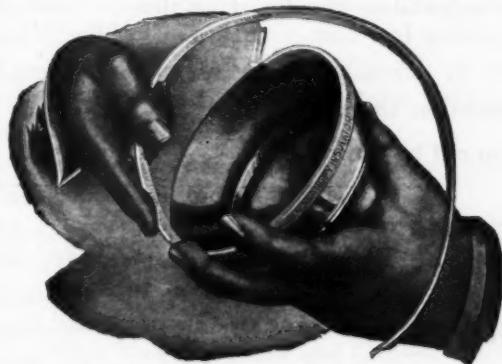
Always Give Voltage of Circuit When Ordering.

WRITE FOR PRICES AND BULLETIN

Manufactured by

SCHWARZE ELECTRIC CO.
ADRIAN, MICHIGAN

Knu Canopy Insulator



Approved by Underwriters' Laboratories

Can be applied to canopy without the use of tools

in rolls of 10 feet.

ARTHUR F. STANLEY

SELLING AGENT

West & Hubert Sts.

New York

Telephone 5200 Canal

TRADE MARK

T&B
REGISTERED

THE NEW CAPPED ELBOW



1470
1/2-inch

1471
5/8-inch

NO PIPE BENDING—permits CONDUIT to run CLOSE TO THE WALL. Eliminates the large unsightly hole in house wall.

NO FISHING WIRES AROUND SHARP BENDS.

ALL OPENINGS BUSHED to prevent abrasion of wires.

Heavily GALVANIZED and weather-proof.

STRONGLY REINFORCED so that only extreme abuse can damage them.

Like every T. & B. product the CAPPED ELBOW carries the guarantee of THE THOMAS & BETTS CO.

Approved by National Board.

Order them from your Jobber.

THE THOMAS & BETTS CO.

63 Vesey St.,
NEW YORK CITY

10 High St.,
BOSTON, MASS.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

HOUSEWIRING AND CLEANERS OFFER BIG OPPORTUNITIES TO ELECTRAGISTS

Can You Use Sales Building Ideas for These Activities?



OF COURSE YOU CAN! Every electrivist can use all the sales building ideas he can get.

The problem is—where can they be obtained? What will they cost? Whose ideas are greatest in promise?

It is evident that the sales ideas—plans—helps—based on data and information produced by an organization representing every branch of the industry will be essentially practical and invaluable to the electrivist.

The Society for Electrical Development is such an organization.

Sales building ideas are constantly being prepared and sent to its members on such subjects as radio retailing, house wiring, selling electric cleaners, etc., throughout the year.

The cost of this effective sales building service is nominal. You, as an electrivist, under a Reduced-Cost Membership plan in effect between your organization—the Association of Electravists, International, and The Society for Electrical Development, Inc., can receive all the sales ideas produced by this active business building organization at a remarkably low cost.

Your business will grow in proportion to the number of sales building ideas you put to work.



Membership in the S. E. D. will insure your receiving only those plans and ideas which have been tried out by others and found really productive.



"DO IT ELECTRICALLY"

FILL OUT THE COUPON AND SEND IT IN TODAY

Association of the Electravists, (International)
15 West 37th Street, New York, N. Y.

Gentlemen:

I am interested in learning full details about the joint-membership plan with The Society for Electrical Development, Inc., and the extremely low rates prevailing for ELECTRIVISTS.

Individual _____ Company _____
Street & No. _____ City _____ State _____

ELECTRIVISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

MINERALLAC HANGERS

Seven
Sizes
Pipe
Measure



Three-eighths
to Two and
one-half inches

Minerallac Cable and Conduit Hangers are intended for use on open wiring where cable or conduit must be compactly arranged and also present a neat appearance. Safety and lasting quality is their reputation.

YOUR JOBBER HAS THEM!



MINERALLAC ELECTRIC COMPANY

1045 Washington Blv'd, Chicago

We Manufacture:—

Rubber Covered Wire—Solid Conductor, Stranded Conductor, Flexible Conductor. Extra Flexible Conductor.

Lamp Cords, Reinforced Cords, Heater Cord, Brewery Cord, Canvasite Cord, Packing-house Cord.

Deck Cable, Stage Cable, Border Light Cable, Flexible Armored Cable.

Elevator Lighting Cable, Elevator Operating Cable, Elevator Annunciator Cable.

Switchboard Cables, Telephone Wire, Flameproof Wires and Cables, Railway Signal Wires, High Voltage Wires and Cables.

Automobile Ignition Cables, Automobile Lighting Cables, Automobile Starting Cables, Automobile Charging Cables.

Moving Picture Machine Cable.

Boston Insulated Wire & Cable Co.

Main Office and Factory:

Dorchester District
Boston, Mass.

Canadian Branch
Office and Factory:
Hamilton, Ont.

DISTRIBUTOR  PRODUCTS

Spring

Is VACUUM CLEANER Time

We have a very attractive sales plan to help our Dealers sell the

Keystone Cleaner

WRITE FOR DETAILS

THE PHILADELPHIA ELECTRIC
COMPANY SUPPLY DEPT.

130-132 South Eleventh Street
Philadelphia

“CENTRAL” RIGID STEEL CONDUIT

ELECTRAGISTS can order this guaranteed conduit with an assurance that they are dealing with a concern that has a policy that makes and keeps friends.



This shows a piece of one-half inch "Central Black" wound around three inch pipe. There is no flattening or buckling of the conduit and the enamel has not cracked or flaked off under this severe test.

"Central White" ----- galvanized

"Central Black" ----- enameled

CENTRAL TUBE CO.
PITTSBURGH, PA.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

BUYER'S GUIDE

of some of the products manufactured by the concerns advertising in this issue. To be listed here is a badge of reliability. To buy from here is a guarantee of satisfaction. When you buy from here please mention

THE ELECTRAGIST

ADAPTERS, LAMP
Arrow Electric Co.
Bryant Electric Co.
Conn. Elec. Mfg. Co.
General Electric Co.
Hubbell, Inc., Harvey

ALARMS, BURGLAR, FIRE
Conn. Telephone & Elec. Co.
Ostrander & Co.
Partrick & Wilkins Co.
Stanley & Patterson.
Western Electric Co.

AMMETERS
Norton Elec'l. Instrument Co.

ANNUNCIATORS
Ansonia Electric Co.
Conn. Telephone & Elec. Co.
Ostrander & Co., W. R.
Partrick & Wilkins Co.
Stanley & Patterson.

ARRESTERS, LIGHTNING
General Electric Co.
Westinghouse Elec. & Mfg. Co.

ASBESTOS MATERIALS
Johns-Manville, Inc.

ATTACHMENTS, SOCKET
Arrow Electric Co.
Hubbell, Inc., Harvey

BATTERIES, DRY
Stanley & Patterson

BATTERY CHARGING OUTFITS
Westinghouse Elec. & Mfg. Co.

BELLS, ELECTRIC
Ansonia Electric Co.
Connecticut Tel. & Elec. Co.
Ostrander & Co., W. R.
Partrick & Wilkins Co.
Schwarze Elec. Co.
Stanley & Patterson.

BENDERS, CONDUIT
Steel City Electric Co.
Thomas & Betts Co.

BLOCKS, MOLDING
Bryant Electric Co.
Roberts Elec. Sup. Co., H. C.

BOLTS, TOGGLE
National Metal Molding Co.
Thomas & Betts Co.
Westinghouse Elec. & Mfg. Co.

BOXES, CONDUIT
Appleton Electric Co.
Chicago Fuse Mfg. Co.
Hart Mfg. Co.
National Metal Molding Co.
Steel City Electric Co.
Thomas & Betts Co.
Westinghouse Elec. & Mfg. Co.

BOXES, FLOOR
Frank Adam Electric Co.
Stanley & Patterson.
Steel City Electric Co.
Thomas & Betts Co.
Westinghouse Elec. & Mfg. Co.

BOXES, MANHOLE (JUNCTION)
Benjamin Elec. Mfg. Co.
Frank Adam Electric Co.
General Electric Co.
Johns-Pratt Co.

BOXES, METER PROTECTING
General Electric Co.
Westinghouse Elec. & Mfg. Co.

BOXES, PULL
Westinghouse Elec. & Mfg. Co.

BOXES, WOOD OR CABINET
Stanley & Patterson.

BRACKETS, TELEPHONE
Stanley & Patterson.
Western Electric Co.

BRUSHES
General Electric Co.
Westinghouse Elec. & Mfg. Co.

BUSHINGS, BOX AND CABINET
Fralick & Co., S. R.
Pass & Seymour, Inc.
Westinghouse Elec. & Mfg. Co.

CABINETS, METAL
Frank Adam Electric Co.
Benjamin Elec. Mfg. Co.
Thomas & Betts Co.
Westinghouse Elec. & Mfg. Co.
Wurdack Electric Co.

CABLE, ARMORED
Eastern Tube & Tool Co.

CHARGING OUTFITS
General Electric Co.
Westinghouse Elec. & Mfg. Co.

CIRCUIT BREAKERS, (Automatic)
General Electric Co.
Westinghouse Elec. & Mfg. Co.

CLAMPS, CABLE SUPPORTING
Steel City Electric Co.

CLAMPS, GROUND CONNECTION
Fralick & Co., S. R.
General Electric Co.
Hart Mfg. Co.
Mineralac Electric Co.
National Metal Molding Co.
Thomas & Betts Co.

CLAMP TEST
Appleton Electric Co.

CLEANERS, VACUUM
Apex Elec'l. Distributing Co.
Western Electric Co.

CLIPS, FUSE
Bryant Electric Co.
Johns-Pratt Co.

COILS, CHOKE
General Electric Co.
Westinghouse Elec. & Mfg. Co.

COLORING AND FROSTING, IN-
CANDESCENT LAMPS
Philadelphia Electric Co.

CONCENTRIC WIRING FIT-
TINGS
General Electric Co.

CONDUCTORS, ARMORED
Tubular Woven Fabric Co.

CONDENSERS, TELEPHONE
Connecticut Tel. & Elec. Co.
Western Electric Co.

CONDUIT BOXES
Thomas & Betts Co.

CONDUIT, FLEXIBLE
Eastern Tube & Tool Co.

CONDUIT, INTERIOR
Alphaduct Co.
American Circular Loom Co.
Central Tube Co.
Clifton Mfg. Co.
Enameled Metals Co.
Johns-Manville, Inc.

Killark Electric Mfg. Co.
National Metal Molding Co.
Saylor Electric & Mfg. Co.
Steel City Electric Co.
Trumbull Electric Mfg. Co.
Tubular Woven Fabric Co.

CONDUITS, UNDERGROUND
Johns-Manville, Inc.

CONNECTORS, BRASS
Cylinder
Bryant Electric Co.
Trumbull Electric Co.

CONNECTORS, EXTENSION
CORD
Arrow Electric Co.
Hubbell, Inc., Harvey

CONNECTORS, SLEEVE
Bryant Electric Co.

CONNECTORS, SOLDERLESS
Dossert & Co.
Westinghouse Elec. & Mfg. Co.

CONNECTORS, WIRE
Conn. Elec. Mfg. Co.

COOKING UTENSILS, ELECTRIC
Westinghouse Elec. & Mfg. Co.

CORDS, FLEXIBLE

Tubular Woven Fabric Co.

United States Rubber Company

CORDS, HEATER

United States Rubber Company

CORDS, LAMP

United States Rubber Company

COUPLING, SHAFT

General Electric Co.

CUTOUTS

Arrow Electric Co.

Bryant Electric Co.

Chicago Fuse Mfg. Co.

Conn. Elec. Mfg. Co.

General Electric Co.

Harvey Hubbell, Inc.

Johns-Pratt Co.

Pass & Seymour, Inc.

Trumbull Electric Mfg. Co.

Westinghouse Elec. & Mfg. Co.

DECORATIVE LIGHTING

General Electric Co.

EBONY ASBESTOS WOOD

Johns-Manville, Inc.

FANS, A.C. AND D.C.

Emerson Electric Mfg. Co.

Western Electric Co.

Westinghouse Elec. & Mfg. Co.

FANS, HANGERS

Adam Electric Co., Frank

FANS, MOTOR

Emerson Electric Mfg. Co.

General Electric Co.

Western Electric Co.

Westinghouse Elec. & Mfg. Co.

FARM LIGHTING GENERATORS

Westinghouse Elec. & Mfg. Co.

FITTINGS, FIXTURE, IRON

Appleton Electric Co.

Bryant Elec. Co.

Fralick & Co., S. R.

General Electric Co.

Killark Electric Mfg. Co.

National Metal Molding Co.

Steel City Electric Co.

Thomas & Betts Co.

Trumbull Electric Mfg. Co.

Vandy, B. A.

Westinghouse Elec. & Mfg. Co.

FIXTURE STUDS

Fralick & Co., S. R.

Thomas & Betts Co.

FURNACES, ELECTRIC

General Electric Co.

Westinghouse Elec. & Mfg. Co.

FUSE REDUCERS

Plainville Elec'l. Prod. Co.

FUSES, ENCLOSED

Bryant Electric Co.

Chicago Fuse & Mfg. Co.

General Electric Co.

Johns-Pratt Co.

Westinghouse Elec. & Mfg. Co.

FUSES, OPEN LINK

Chicago Fuse & Mfg. Co.

General Electric Co.

Westinghouse Elec. & Mfg. Co.

FUSES, TELEPHONE

Chicago Fuse & Mfg. Co.

Western Electric Co.

GENERATORS, LIGHT AND

POWER

Emerson Electric Mfg. Co.

General Electric Co.

Westinghouse Elec. & Mfg. Co.

GUARDS, LAMP

Benjamin Elec. Mfg. Co.

Hubbell, Inc., Harvey

HANGERS, ARC LAMP

General Electric Co.

Westinghouse Elec. & Mfg. Co.

HANGERS, CONDUIT and CABLE

Appleton Electric Co.

Mineralac Electric Co.

Steel City Elec. Co.

Thomas & Betts Co.

HANGERS, FIXTURE and BOX

Westinghouse Elec. & Mfg. Co.

HANGERS, LAMP

Bryant Electric Co.

HEATERS, LIQUID

General Electric Co.

Westinghouse Elec. & Mfg. Co.

HEATING DEVICES

Westinghouse Elec. & Mfg. Co.

HIGH TEMPERATURE CEMENTS

Johns-Manville, Inc.

HOLDERS, SHADE

Arrow Electric Co.

Hubbell, Inc., Harvey

HOLDERS, BATTERY

Ostrander & Co., W. R.

Stanley & Patterson

INSTRUMENTS, INDICATING

General Electric Co.

Westinghouse Elec. & Mfg. Co.

INSTRUMENTS, LAMP TEST-

ING

General Electric Co.

INSTRUMENTS, MINIATURE

SWITCHBOARD

General Electric Co.

Westinghouse Elec. & Mfg. Co.

INSTRUMENT, POCKET

Connecticut Tel. & Elec. Co.

INSTRUMENTS, RECORDING and

CURVE DRAWING

General Electric Co.

Westinghouse Elec. & Mfg. Co.

INSTRUMENTS, TESTING

General Electric Co.

Westinghouse Elec. & Mfg. Co.

INSULATION, MOLDED

Johns-Manville, Inc.

Johns-Pratt Co.

Westinghouse Elec. & Mfg. Co.

INSULATORS, CANOPY

Arthur F. Stanley

General Electric Co.

INSULATORS, HIGH VOLTAGE

General Electric Co.

Johns-Manville, Inc.

Stanley, Arthur F.

Westinghouse Elec. & Mfg. Co.

INSULATORS, TREE

Westinghouse Elec. & Mfg. Co.

IRONING MACHINES

Apex Elec'l. Distributing Co.

IRONS, CURLING

Westinghouse Elec. & Mfg. Co.

IRONS, SOLDERING

General Electric Co.

Westinghouse Elec. & Mfg. Co.

JOINTS, CABLE

Dossert & Co.

Westinghouse Elec. & Mfg. Co.

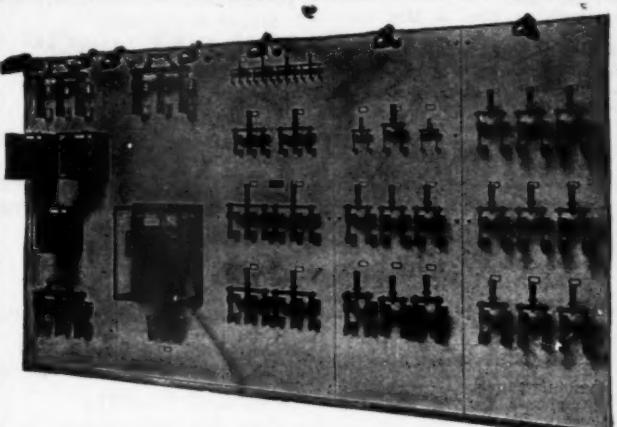
JOINTS, FIXTURE INSULATING

Thomas & Betts Co.

LAMPS, ARC

General Electric Co.

Westinghouse Elec. & Mfg



WURDACK

SWITCHBOARDS PANEL BOARDS
STEEL CABINETS KNIFE SWITCHES
LET US
FIGURE YOUR REQUIREMENTS.

WM. WURDACK
ELECTRIC MFG. COMPANY
ST. LOUIS, MO.



On a Vertical Conduit On a Horizontal Conduit
 $\frac{1}{2}$ Inch to 2 Inches $\frac{1}{2}$ Inch to 2 Inches

Electrical Contractors Like the "Electrolet" Entrance Fitting, Because:

- It is reversible.
- It can be used on any kind of entrance, $\frac{1}{2}$ -inch to 4 inches.
- It comes assembled; there are no parts to buy separately.
- There are only two screws to be tightened.
- The porcelain is not held on with screws, to be snapped in two at the last twist of the screwdriver.
- It is weatherproof, and has the Underwriters' approval.

Write for booklet

KILLARK ELECTRIC MFG. CO.
3940-48 Easton Avenue
St. Louis, Mo.



On a Vertical Conduit On a Horizontal Conduit
 $2\frac{1}{2}$ to 4 Inches $2\frac{1}{2}$ to 4 Inches

BARD-PARKER
Wire Insulation Stripper
(WOOD PATENT)



CAN STRIP 1200 ENDS AN HOUR

No. 1 TOOL
Regularly Equipped with 3 hole blades for size No. 11 and smaller. Interchangeable single hole blades for any special size desired also supplied when specified.

BARD-PARKER COMPANY, Inc.
150 Lafayette St., New York City

Write for Particulars

INSURANCE AT COST
Liability and Automobile

In 1915 the Insurance Committee of the A.E.I. investigated and recommended this insurance organization to the membership of the Association.

All through the eight years that have passed since 1915 the relations thus established have been closely maintained until Lynton T. Block & Company is known to every Electragist.

The advantages, both in Protection, Service and Savings, that are afforded through the Merit Saving Plan of Insurance are well worth consideration by every member, as they have the unqualified endorsement of the Insurance Committee of the A.E.I. year after year.

Remember, this is one of the benefits of membership.
For complete information address

LYNTON T. BLOCK & CO.,
UNDERWRITERS, INC.
Reduced Cost Insurance for Special Classes
ST. LOUIS, MO.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

BUYER'S GUIDE—Continued.

LAMPS, TROUBLE, AUTOMOBILE, PORTABLE, HAND
Connecticut Tel. & Elec. Co.
Stanley & Patterson.

LIGHTING FIXTURES
Benjamin Elec. Mfg. Co.
Curtis Lighting, Inc.
Shapiro & Aronson, Inc.
Western Electric Co.
Westinghouse Elec. & Mfg. Co.

LIGHTS, STAGE
Western Electric Co.

LOCKS, AUTOMOBILE
Connecticut Tel. & Elec. Co.

LOCKNUTS
Fralick & Co., S. R.

LGGS, TERMINAL
Dossers & Co.
Trumbull Electric Co.
Westinghouse Elec. & Mfg. Co.

METAL PRODUCTS
Midwest Metal Prod. Co.

MOLDING, METALLIC
Appleton Electric Co.
National Metal Molding Co.

MOTOR GENERATORS
General Electric Co.
Westinghouse Elec. & Mfg. Co.

MOTORS, POWER
Emerson Electric Co.
General Electric Co.
Western Electric Co.
Westinghouse Elec. & Mfg. Co.

PADS, HEATING
Philadelphia Electric Co.
Westinghouse Elec. & Mfg. Co.

PAINTS AND COMPOUNDS
General Electric Co.
Johns-Manville, Inc.
Mineralac Electric Co.
Standard Underground Cable Co.
Westinghouse Elec. & Mfg. Co.

PANEL BOARDS
Adam Electric Co., Frank
Johns-Manville, Inc.
Plainville Elec'l Prod. Co.
Trumbull Electric Mfg. Co.
Westinghouse Elec. & Mfg. Co.

PERCOLATORS
Westinghouse Elec. & Mfg. Co.

PLANTS, LIGHTING
General Electric Co.
Western Electric Co.
Westinghouse Elec. & Mfg. Co.

PLATES, FLUSH SWITCH
Arrow Electric Co.
Bryant Electric Co.
Connecticut Tel. & Elec. Co.
Hubbell, Inc., Harvey

PLUGS AND RECEPTACLES
Arrow Electric Co.
Bryant Electric Co.
Chicago Fuse Mfg. Co.
Conn. Elec. Mfg. Co.
General Electric Co.
Hart Mfg. Co.
Hubbell, Inc., Harvey
Johns-Manville, Inc.
Johns-Pratt Co.
National Metal Molding Co.
Pass & Seymour, Inc.
Stanley & Patterson
Trumbull Electric Co.
Western Electric Co.
Westinghouse Elec. & Mfg. Co.

PLUGS, SPARK
Western Electric Co.

POLE LINE HARDWARE
National Metal Molding Co.
Westinghouse Elec. & Mfg. Co.

PORCELAIN, STANDARD
General Electric Co.

PORCELAIN PRODUCTS
Pass & Seymour, Inc.
Sears, Henry D.

POSTS, LAMP, ORNAMENTAL
Westinghouse Elec. & Mfg. Co.

POTS, MELTING
General Electric Co.
Westinghouse Elec. & Mfg. Co.

PROJECTORS, ELECTRIC
Curtis Lighting, Inc.
General Electric Co.
Western Electric Co.
Westinghouse Elec. & Mfg. Co.

PROTECTORS, LINEMEN'S
Mineralac Electric Co.

PROTECTORS, THREAD, CONDUIT
Enameled Metals Co.

PROTECTORS
Connecticut Tel. & Elec. Co.
Mineralac Electric Co.
Partrick & Wilkins Co.
Stanley & Patterson

RADIATORS, ELECTRIC
Westinghouse Elec. & Mfg. Co.

RADIO APPARATUS
General Electric Co.
Ostrander & Co., W. R.
Philadelphia Elec. Co.
Stanley & Patterson
Trumbull Elec. Mfg. Co.
Westinghouse Elec. & Mfg. Co.

RANGES, ELECTRIC
Westinghouse Elec. & Mfg. Co.

REFLECTORS, PORCELAIN, ENAMELED, IRON and STEEL
Benjamin Elec. Mfg. Co.
Curtis Lighting, Inc.
Hubbell, Inc., Harvey
Westinghouse Elec. & Mfg. Co.

REGULATORS, VOLTAGE
General Electric Co.
Westinghouse Elec. & Mfg. Co.

RHEOSTATS
General Electric Co.
Westinghouse Elec. & Mfg. Co.

ROSETTES
Arrow Electric Co.
Bryant Electric Co.
Conn. Elec. Mfg. Co.
General Electric Co.
Hubbell, Inc., Harvey
National Metal Molding Co.
Pass & Seymour, Inc.
Trumbull Electric Mfg. Co.

SAFETY PANELS
Penn Elec'l & Mfg. Co.

SHADES, METALLIC
Benjamin Elec. Mfg. Co.
Hubbell, Inc., Harvey
Ostrander & Co., W. R.

SIGNALS, FACTORY AND OFFICE
Stanley & Patterson.

SOCKETS AND RECEPTACLES
Appleton Electric Co.
Arrow Electric Co.
Benjamin Elec. Mfg. Co.
Conn. Elec. Mfg. Co.
General Electric Co.
Hubbell, Inc., Harvey
National Metal Molding Co.
Ostrander & Co., W. R.
Pass & Seymour, Inc.

STANLEY & PATTERSON
Sears, H. D.
Stanley & Patterson
Trumbull Electric Co., Inc.
Westinghouse Elec. & Mfg. Co.

SOLDERING COMPOUNDS
Westinghouse Elec. & Mfg. Co.

STARTERS, MOTORS
General Electric Co.
Westinghouse Elec. & Mfg. Co.

STERILIZERS, WATER, ELECTRIC
Westinghouse Elec. & Mfg. Co.

STRAPS AND CLAMPS, CONDUIT
Fralick & Co., S. R.

STOVES, DISC
Westinghouse Elec. & Mfg. Co.

SUPPLIES, ELECTRICAL

Adam Electric Co., Frank
Baltimore Elec'l Supply Co.
National Elec'l Supply Co.
Newark Elec'l Supply Co.
Ostrander & Co., W. R.
Philadelphia Electric Co.
Roberts Elec. Supply Co., H. C.
Rumsey Electric Co.
Southern Electric Co.
Stanley & Patterson
Western Electric Co.

SWITCHBOARDS, LIGHT AND POWER

Adam Electric Co., Frank
Benjamin Elec. Mfg. Co.
Bryant Electric Co.
General Electric Co.
Plainville Elec'l Prod. Co.
Trumbull Electric Mfg. Co.
Westinghouse Elec. & Mfg. Co.
Wurdack Electric Mfg. Co.

SWITCHES, BABY KNIFE

Bryant Electric Co.
General Electric Co.
Trumbull Electric Mfg. Co.

SWITCHES, BATTERY

Hubbell, Inc., Harvey
Ostrander & Co., W. R.
Partrick & Wilkins Co.
Trumbull Electric Mfg. Co.

SWITCHES, DISCONNECTING

General Electric Co.
Westinghouse Elec. & Mfg. Co.

SWITCHES, FIXTURE

Arrow Electric Co.
Hubbell, Inc., Harvey
Pass & Seymour, Inc.

SWITCHES, KNIFE

Adam Electric Co., Frank
Conn. Elec. Mfg. Co.
General Electric Co.
Hart Mfg. Co.
Trumbull Elec. Mfg. Co.
Westinghouse Elec. & Mfg. Co.

SWITCHES, SAFETY

Adam Electric Co., Frank
Conn. Elec. Mfg. Co.
General Electric Co.
Johns-Pratt Co.
Trumbull Elec. Mfg. Co.
Westinghouse Elec. & Mfg. Co.

SWITCHES, SNAP

Arrow Electric Co.
Connecticut Tel. & Elec. Co.
General Electric Co.
Hart Mfg. Co.
Hubbell, Inc., Harvey
National Metal Molding Co.
Pass & Seymour, Inc.
Trumbull Electric Mfg. Co.

SWITCHES, TIME, AUTOMATIC

General Electric Co.

SWITCHES, VOLTMETER

Adam Electric Co., Frank
Trumbull Electric Mfg. Co.
Westinghouse Elec. & Mfg. Co.

TAPE, INSULATING

General Electric Co.
Johns-Manville, Inc.
New York Insulated Wire Co.
United States Rubber Company
Westinghouse Elec. & Mfg. Co.

TAPS, CURRENT

Arrow Electric Co.
Hubbell, Inc., Harvey

TELEPHONES

Connecticut Tel. & Elec. Co.
Stanley & Patterson
Western Electric Co.

TERMINALS, CABLE

Standard Underground Cable Co.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground Cable Co.

WESTERN ELECTRIC CO.

TERMINALS, TELEPHONE

Standard Underground

"Buy Electrical Supplies from Electrical Supply Jobbers"

QUICK REFERENCE LIST for the Convenient Use of Contractor-Dealers, in which Electrical Supply Jobbers in various Sections invite Your Patronage

ATTENTION, JOBBERS!

With its present circulation this magazine covers YOUR territory.

You should reserve this space for your card. Write for terms.

THE ELECTRAGIST

15 West 37th St. New York City

Our aim is to distribute only Quality Electric Products and we are always ready to serve your requirements.

THE PHILADELPHIA ELECTRIC COMPANY SUPPLY DEPARTMENT

130-132 So. Eleventh St., Philadelphia, Pa.

SUBSCRIBE FOR THIS MAGAZINE TODAY AND RECEIVE THE REPORTS OF ASSOCIATION ACTIVITIES IN EVERY ISSUE

Published Monthly. \$2.00 a Year.

THE ELECTRAGIST

15 West 37th Street, New York City

Deal with a jobber that has always recognized the electrical contractor and where you can depend upon

HIGHEST GRADE OF ELECTRICAL MATERIALS

Right Prices and Immediate Delivery

Baltimore Electrical Supply Co.
BALTIMORE, MD.

SUPPLY JOBBERS PLEASE NOTE

Make your business known to thousands of reliable contractor-dealers by reserving one of these card spaces at once. Address

THE ELECTRAGIST

15 West 37th Street New York City

SOUTHERN ELECTRIC CO.

Distributing Jobbers

Electrical and Radio Supplies

Richmond BALTIMORE Norfolk

Distributors for General Electric Company, Radio Corporation of America, and other large and reputable manufacturers.

NATIONAL ELECTRICAL SUPPLY CO.

1328-30 New York Avenue, Washington, D. C.

DISTRIBUTORS—JOBBERS

Electrical Supplies	Radio Supplies
Automobile Accessories	Machinery & Mill Supplies

Established 1870

For Service—

RUMSEY ELECTRIC COMPANY

1007 ARCH ST., PHILADELPHIA

Distributors

ELECTRIC SUPPLIES AND MACHINERY

LARGE STOCK

PROMPT SHIPMENT

Oldest and Largest Electrical Supply Jobbers in New Jersey

Newark Electrical Supply Co.

"The House of Quick Service"

223 Market Street Newark, N. J.

UNIVERSAL ESTIMATE SHEETS

They Simplify Estimating

Supplied By

ASSOCIATION OF ELECTRAGISTS INTERNATIONAL

Formerly National Association of Electrical Contractors and Dealers.

15 West 37th Street New York

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

Standard

Rubber Insulated Wire
offers to the electrical contractor an opportunity to secure satisfied customers and a satisfactory profit for himself.

Standard Underground Cable Co.
Boston Washington Chicago
New York Pittsburgh Detroit
Philadelphia San Francisco St. Louis

STANDARD
UNDERGROUND CABLE CO.

Americore
RUBBER-COVERED
Wire

for interior wiring
All sizes and voltages.
Thoroughly reliable. Safe.
Underwriters' inspection and endorsement
Illustrated catalogue—free.

American Steel & Wire
CHICAGO NEW YORK Company



SUPERIOR CONDUITS

AMERICAN CIRCULAR LOOM CO.

90 West St., New York

Boston
Chicago

Los Angeles
San Francisco

Seattle
Toronto

"DETROIT" RUBBER COVERED WIRES

(Reg. U. S. Pat. Office)

Rubber Insulated Wires and Cables
FOR EVERY ELECTRICAL PURPOSE
DETROIT INSULATED WIRE CO.
DETROIT, MICH.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

Cut Your Overhead Costs with a MARTIN Portable Vise Stand

The big time, labor and money saver. Provides a light, portable, easy-to-handle means of bending conduit, cutting pipe, threading pipe right on the job. No running back to the shop.



Used by hundreds of contractors. Try it yourself. 10 days' free trial offer. If it doesn't fill the bill, send it back charges collect. Try it!



Write us for full details now
H. P. Martin & Sons
804 W. 12th St., Owensboro, Ky.



ATLANTIC Insulated Wires

Atlantic Insulation is notable for its dependability and maximum service.

DOLPHIN, Code; TRITON, Intermediate Grade 25% Para;

and NEPTUNE, 30% Para; are three widely known and extensively used Atlantic Wires.

If you want to build or hold a reputation for quality work, see that "Atlantic" goes in the job.

Price lists and discounts upon request.

ATLANTIC Insulated Wire & Cable COMPANY
STAMFORD, CONN.

OPPORTUNITIES

are in these pages every month. Do you take advantage of those offered by our advertisers?

Each number of this publication is a composite catalog of new and useful things for the contractor-dealer.

Each person connected with your business should read every issue of this publication—

FOR PROFIT

YAGER'S Soldering PASTE SALTS

Will prevent the inspector turning down your jobs because of poorly soldered connections. Play safe.

Write us for full particulars.

Alex R. Benson Co., Inc., Hudson, N. Y.
For list of distributors see McRea's 1923 Blue Book.



[Carried by over 300 Jobbers]

KRUSE Supporting Strips and Lath Holders

Can be used on any box with an ear, either conduit or loom.

No accurate measurements are required.

There is no worry about the Plumber or Furnace man having his pipes in the space intended for your switch-box—all you need is space enough for the switch box,

because the Kruse Strip nails to the face of the studding.

They cost the electrical contractor 10c per set or less in quantities. Saves from 50 to 75 cents on each box installed and makes a better job.

A sample set sent FREE on request—and welcome!

MIDWEST METAL PRODUCTS COMPANY
MUNCIE, INDIANA



We beg to announce that we are NOW in a position to supply

ENAMELED MAGNET WIRE

of the highest grade in sizes ranging from No. 7 to No. 38 B. & S. Ga.

We would appreciate a trial order.



We also manufacture Weatherproof, Slow Burning, Annunciator, Office and Magnet Wires and Cables and Stranded Antenna Wire

ACME, EUREKA, AND WIZARD IRON AND WOOD BOX BELLS AND BUZZERS

Annunciators and Push Buttons

"Daisy" Floor Treads

The Ansonia Electrical Company, Ansonia, Conn., U. S. A.

Every Thing from Generator to Lamp

H. C. ROBERTS ELECTRIC SUPPLY CO.

SYRACUSE, N. Y.

Cor. W. Water and N. Franklin Streets,

WASHINGTON, D. C.

806 Twelfth Street, N. W.

ELECTRICAL SUPPLIES



RADIO

PHILADELPHIA, PA.

1101-5 Race Street

BALTIMORE, MD.

16 South Howard Street

AUTOMOTIVE EQUIPMENT

Armored Cable
Flexible Steel Conduit



Etco
Quality Products

Write for our vestpocket telephone directory.

EASTERN TUBE & TOOL CO., Inc.
Brooklyn, N. Y.

NON-METALLIC FLEXIBLE CONDUIT



ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

TABLE OF CONTENTS

	Page		Page	
Personal Views of the Editor.....	10	How to Increase Summer Radio Sales.....	28	New England Inspectors Meet.....
Do It Electrically—III.....	11	Chats on the Code.....	29	Rhode Island League Meeting.....
Specify the Materials.....	15	Uniform Estimating.....	31	New Indiana State Association.....
Future of Radio as a Business.....	16	Organization Activities.....	32	International Members.....
Storage Batteries for Radio Use.....	17			Cleveland League Work.....
Boost the Annual A. E. I. Convention.....	18			Convention Dates.....
Contractor or Contractor-Dealer?.....	19			News Notes.....
Debate on Contracting-Merchandising.....	20			Manufacturing.....
New Kinks for the Radio Dealer.....	26			A. E. I. Officers and Committeemen.....

ADVERTISING INDEX

	Page		Page		Page
A		G		P	
A. A. Wire Co.	59	General Electric Co.	8	Pass & Seymour, Inc.	7
Adam Electric Co., Frank.....	55			Patrick & Wilkins Co.	61
Alphaduct Co.	51			Philadelphia Electric Co., Supply Dept.	71
American Circular Loom Co.	76			Plainville Elec'l Prod. Co.	55
American Steel and Wire Co.	76			Propp Co., M.	68
Ansonia Electrical Co.	77				
Apex Elec'l. Distributing Co.	3				
Appleton Electric Co.	63				
Arrow Electric Co.	4				
Atlantic Insulated Wire & Cable Co.	76				
B		H		R	
Bard-Parker Co., Inc.	73	Hart Manufacturing Co.	57	Roberts Elec. Supply Co., H. C.	77
Benson Co., Inc., Alex R.	76	Harvey Hubbell, Inc.	45	Rumsey Electric Co.	75
Block & Co., Lynton T.	73				
Boston Insulated Wire & Cable Co.	71				
Bryant Electric Co.	41				
Buyers' Guide	72, 74				
C		I		S	
Central Tube Co.	71	Indiana Rubber & Insulated Wire Co.	59	Safety Insulated Wire & Cable Co.	65
Chicago Fuse Manufacturing Co.	59			Saylor Elec'l Mfg. Co.	2
Clifton Manufacturing Co.	63			Schwarze Electric Co.	69
Cole Metal Prod. Co.	55			Sears, Henry D.	43
Curtis Lighting, Inc.	5			Shapiro & Anderson, Inc.	65
D		J		Society for Electrical Development	70
Detroit Insulated Wire Co.	76	Jobbers' Quick Reference	75	Southern Electric Co.	75
E		K		Standard Accounting System	62
Edison Lamp Works	66, 67	Killark Electric Mfg. Co.	73	Standard Underground Cable Co.	76
Eastern Tube and Tool Co.	77			Stanley, Arthur F.	69
Executive Committee	64			Stanley & Patterson	Second Cover
Emerson Electric Manufacturing Co.	47			Steel City Electric Co.	68
Enamelled Metals Co.	63	L			
F		Lighting Fixture Ready Reference	65	T	
Fralick & Co., S. R.	6			Thomas & Betts Co.	69
		M		Trumbull Electric Mfg. Co.	53
		Market Place	65	Tubular Woven Fabric Co.	80
		Minerallac Electric Co.	71	Tork Company	Front Cover
		Martin & Sons, H. P.	76		
		Midwest Metal Product Co.	77	U	
		Mutual Elec. and Machine Co.	Back Cover	U. S. Rubber Co.	1
		N		V	
		National Electrical Supply Co.	75	Vandy, B. A.	61
		National Metal Molding Co.	Third Cover		
		Newark Electrical Supply Co.	75		
		New York Insulated Wire Co.	61	W	
				Western Electric Co.	79
				Westinghouse Elec. & Mig. Co.	49
				Wurdack Electric Mfg. Co., Wm.	73



This is what your electrical contractor does for you

Roping horses may strike you as an odd pursuit for an electrical contractor-dealer, but that is precisely what he does.

In this case the "horse" is an electrical horsepower. The "rope" used is a coil of wire. This horsepower, the energy furnished by your electric light company, must be caught and tamed by the contractor before it can go to work for you.

The contractor is the man who arranges the wiring installation in your house—the path over which those electrical horsepower will leap to your bidding.

But he does more. By his expert knowledge of the equipment you need and the right place to put it, by his constant lookout for more efficient lighting devices and labor-saving appliances, he enables you to get the greatest possible service out of electricity.

Don't overlook a chance to get more work done by this cheap and capable servant, electricity. Put it up to your electrical contractor.

*Published in
the interest of Elec-
trical Development by
an Institution that will
be helped by what-
ever helps the
Industry.*

Western Electric Company

Since 1869 makers and distributors of electrical equipment

No. 45 of a series

GOOD will for the contractor-dealer: Western Electric is right behind you to tell the people of your town about the service you stand ready to give them. This advertisement appeared in March and is one of a series running in

national magazines. It may prove helpful to your business to reprint this over your own name in your local newspaper. (Credit to Western Electric not necessary.) For mat, address our nearest House, or 100 East 42nd Street, New York City.



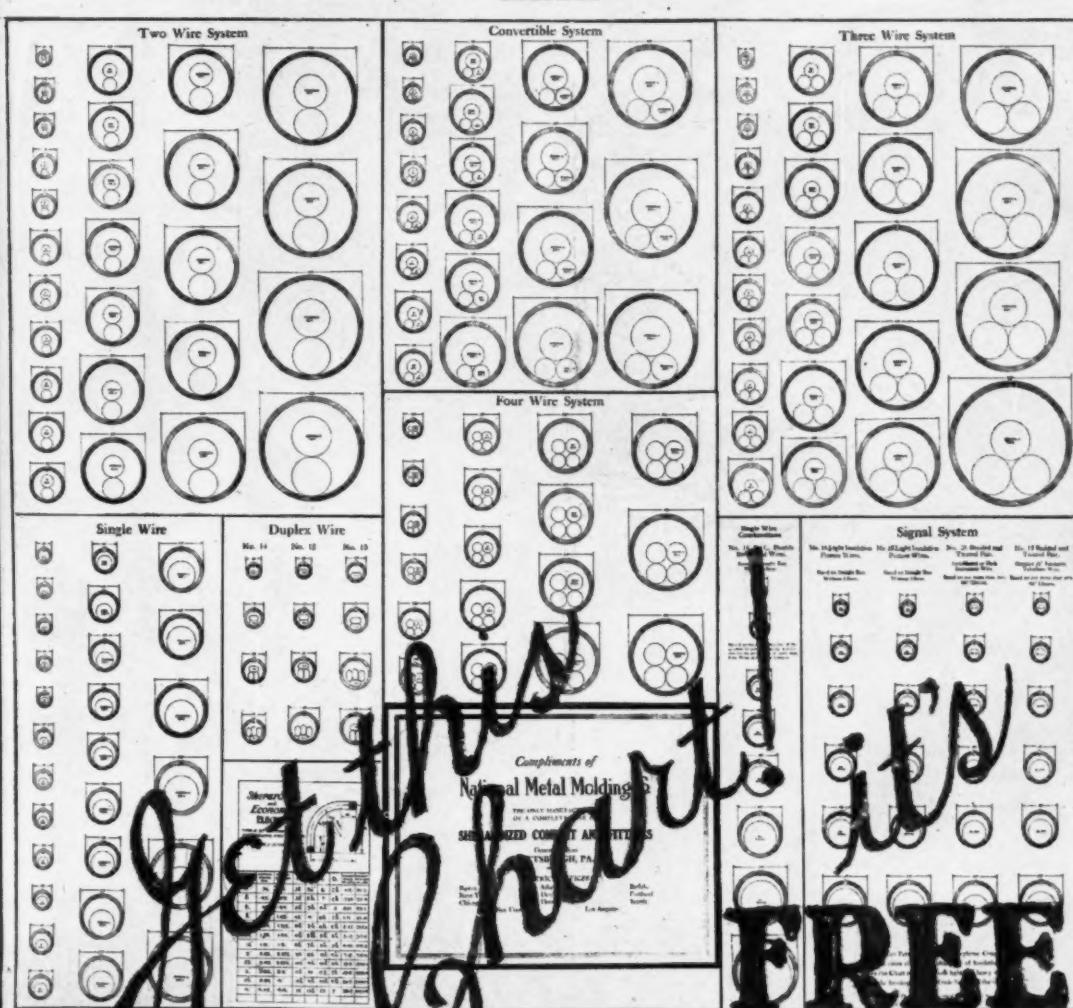
Used by those
Contractors
Who Prefer QUALITY
PRODUCTS.

Made at Pawtucket, R. I., by the Tubular Woven Fabric Company

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

Standard Sizes of CONDUITS for the Installation of Wires and Cables

ADOPTED AND RECOMMENDED BY
THE NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION OF THE UNITED STATES
AND RECORDED BY
THE NATIONAL ELECTRICAL CODE
SHAPES ARE ONE HALF FULL SIZE



WHAT size of conduit? What about elbows? Questions instantly and authoritatively settled for any job where rigid conduit is to be installed.

This Chart hangs on the wall as handy as a calendar—and as necessary when wiring must be figured.

It is a quiet reminder of *Sherarduct*—the Rigid Conduit. The Chart is free, and so intensely practical you will regularly use it.

National Metal Molding Company



WORLD'S LARGEST PRODUCERS OF ELECTRICAL CONDUITS AND FITTINGS



1214 Fulton Building, Pittsburgh, Pa.

Represented in All Principal Cities

10

Make certain on every wiring job with this free Chart. Just slip this coupon in the mail now; that's all you need to do.

MAIL TODAY

National Metal Molding Company
Pittsburgh, Pa.

Please send free Chart of Standard Sizes of Conduits.

Name _____

Firm _____

Address _____

1214

Sherarduct

The Rigid Conduit That Bends

JUNIOR SWITCHES

Quick Make AND Quick Break

TO GET you acquainted with the "JUNIOR" line, we are making the following special offers to electrical contractors.

The "Junior Switch" is a worthy companion to our "Bull Dog"—built in the same factory, with the same expert workmanship, and the same painstaking attention to details.

We believe that you will agree with us that the "Junior" represents an extraordinary value in a type "C" Enclosed Switch, Underwriters' Approved.

Only one Lot No. 1 or one Lot No. 2 to any one customer, but any customer can buy both lots.

INTRODUCTORY OFFER

—LOT NO. 1—

3 -3 Pole Jun- \$18.40
ior Switches

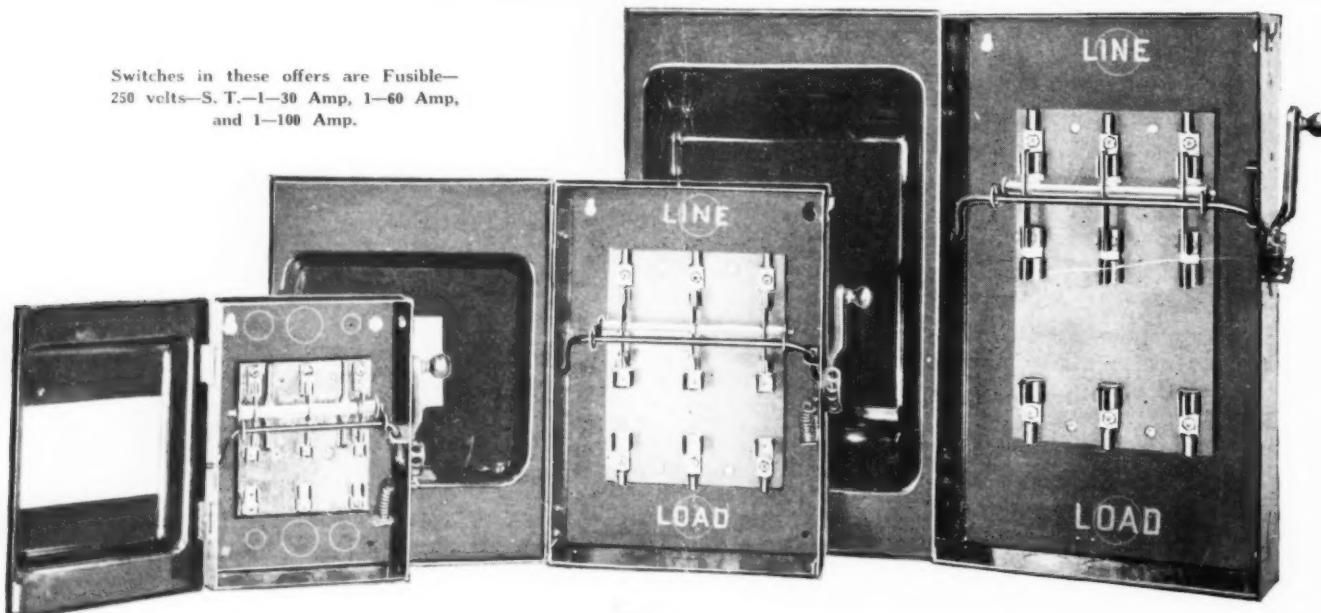
West of Mississippi River, \$19.90

—LOT NO. 2—

3 -2 Pole Jun- \$14.00
ior Switches

East of Mississippi River, \$15.50

Switches in these offers are Fusible—
250 volts—S. T.—1—30 Amp, 1—60 Amp,
and 1—100 Amp.



BULLDOG
MUTUAL ELECTRIC & MACHINE CO.
DETROIT, MICH., U.S.A.

1

effective sales ammunition at his command. Lectures embracing merchandising principles, advertising, and selling are given which instruct the student as to how to use the sales ammunition which he has acquired. Contracts, sales rules, surveys of the various markets and the methods of developing them are discussed in lectures with a view to aid every man in his particular field to expand his business.

The newly completed demonstration rooms at Nela Park were used for the first time by this school. Containing the whole lighting story in a nut shell, the demonstrations in these rooms helped those attending the course to visualize the facts and principles brought out in lectures as could be accomplished in no other way.

The entrance to the demonstration rooms leads into a reception room or lounge. Adjoining this room is a class room which is equipped with special demonstration lighting fixtures, a stage for demonstration purposes, tables equipped with individual drawers for each student's books, papers and working materials, and demonstration booths along the sides of the room showing the most up-to-date lighting equipment. Individual rooms containing equipment for demonstration industrial lighting, home lighting, street lighting, automobile lighting, show window lighting, sign lighting and sales helps enable the visitors to obtain in a short time a most comprehensive idea of the modern methods of lighting and the benefits from good lighting as contrasted with bad lighting.

It is sometimes quite difficult to picture the immense possibilities of light

as applied in the various fields and these demonstration rooms serve admirably to span the gap between imagination and realization.

News Notes Concerning Electrical Contractor-Dealers

Business Changes, Store Improvements, and New Establishments Opened

D. M. Palmer has opened an electrical supply store at 2317 East Sixteenth Street, Los Angeles, California.

Lynn Electric Corporation will conduct an electrical supply business at Lynn, Massachusetts. Incorporated capital, \$10,000. Incorporators: J. H. Faulkner, 63 Middlesex Avenue, Swampscott, Massachusetts, and others.

Kentucky Utilities Company is locating at Carlisle, Kentucky, where a complete line of electrical supplies will be carried.

Samuel H. Deering, Incorporated, has established headquarters at Portland, Maine, where an up-to-date line of electrical merchandise will be handled. Incorporated capital, \$10,000. Incorporators: S. H. Deering, South Portland, and others.

Elconins Electrical Company announces its opening at 881 East 105th Street, Cleveland, Ohio.

Fidelity Electric Shop of which Wade Smith is proprietor, is engaged in the electrical supply business at 507 Jackson Street, Chillicothe, Missouri.

Newark Electric Company is conducting an electrical supply business at 226 West Madison Street, Chicago, Illinois. Incorporated capital, \$10,000.

Incorporators: H. R. Wakam and others.

M. F. Prime has opened an electrical and radio supply store at Hugoton, Kansas.

Biloxi Electric Company will conduct an electrical supply business at Biloxi, Mississippi. Incorporated capital, \$15,000. Incorporators: W. A. Sullivan and others.

A. W. Rogers announces the opening of an electrical supply store at the Gammon and McKnight Building, Clinton, Massachusetts.

Marion Electric Company has established headquarters at Marion, Ohio. Incorporated capital, \$15,000.

Electric Service Company is engaged in the electrical supply business at 109 West Elm Street, Urbana, Illinois.

Hale Electric Company will conduct an electrical supply business at Pasadena, California. Incorporated capital, \$25,000. Incorporators: E. H. Hale, 800 South Marengo, Pasadena, and others.

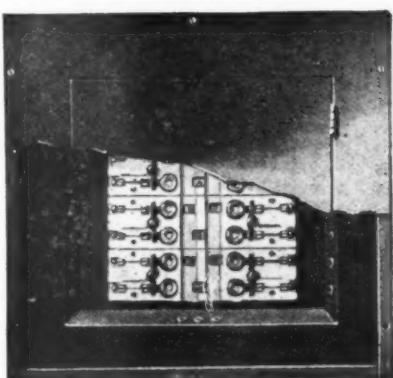
Topeka Edison Company is opening an electrical appliance department at 808 Kansas Avenue, Topeka, Kansas.

Electric Service & Supply Company, Incorporated, has established headquarters at Greenville, North Carolina. Incorporated capital, \$25,000. Incorporators: C. F. Hardes, Greenville and others.

Electrical Service Company announces its opening at 2115 Gallia Street, Portsmouth, Ohio, where an extensive line of electrical and radio supplies will be carried.



Many Electrical Men From Every Branch of the Industry Attended the Ninth Illuminating Design Course Recently Held at Nela Park
Left, Street Lighting Conference Room; Right, Corner of Room Where Demonstrations in Industrial Lighting Were Given

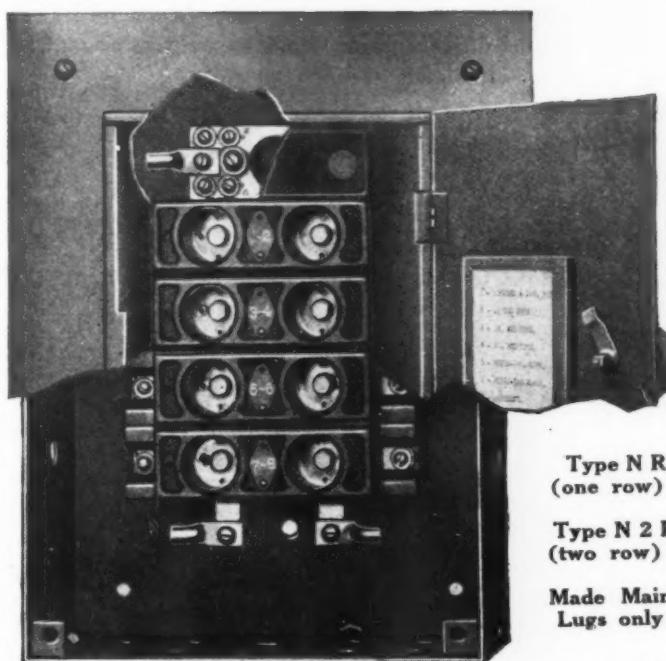


COLE

Enclosures for Every Electrical Requirement
Cutout Boxes, Cabinets, Junction
Pull Boxes, Conduit Fittings

**Write for Your Copy
of Our New Catalog**

COLE METAL PRODUCTS CO., Inc.
330 East 23d St., New York City



Type N R
(one row)
Type N 2 R
(two row)
Made Main
Lugs only

THE FIRST SINGLE FUSE PANELBOARD THE NEW TYPE N R

Rule 807, paragraph "b," 1923 National Electric Code, permits under specified circumstances the above type of panelboard using a single fuse in the branches.

It is our pride to be first with a practical, high-quality, low-cost panelboard to fit this condition, and to announce herewith the new

Type N R (shown above) and Type N 2 R (two row construction) both in stock and ready for shipment. These are new members of the well known line of Triumph Safety Type Unit Constructed Panelboards and are sure to fulfill every requirement.

Send for description, details and prices.

Frank Adam
ELECTRIC COMPANY
ST. LOUIS

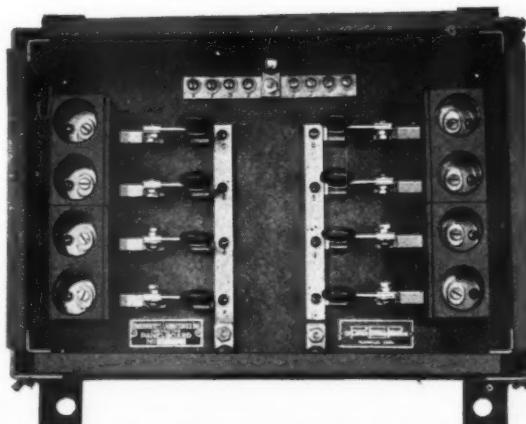
District Offices:

Detroit, Cincinnati, New Orleans, Dallas,
Minneapolis, Kansas City, Indianapolis,
Los Angeles, San Francisco, Philadelphia,
Denver, Seattle, Chicago, Pittsburgh,
New York City.

Other Products

Major System of Theater Lighting
Control; knife switches; safety
switches; hanger outlets; reversible-
cover floor boxes; A. C. and
D. C. Distribution Switchboards.

1923 CODE PANELS SAVE MONEY



Send in Your Specifications for New Work or Jobs Not Started. IT WILL PAY YOU IN DOLLARS to Make Use of Our Knowledge, Experience and Service. We are now delivering 3-3 and 3-2 Live and Dead Front Panels, 1923 Code. The cost is less.

**SWITCHBOARDS—PANELBOARDS
FUSE-REDUCERS**

THE PLAINVILLE ELECTRICAL PRODUCTS CO.
PLAINVILLE, CONN.

C. D. Barker Electric Company is engaged in the electrical supply business at Jackson, Michigan. Incorporated capital, \$25,000.

Warren Electrical Company has opened a new store at 5 Bridge Street, Paterson, New Jersey.

Watson Electric Company has established headquarters at Rocky Mount, North Carolina. Incorporated capital,

\$25,000. Incorporators: V. S. Watson, Rocky Mount, and others.

Service Appliance Company, Incorporated, in the electrical appliance business at Schenectady, New York, has leased a store in the Wood Building, North Street, Pittsfield, Massachusetts, and is open for business.

Lycoming Edison Electrical Company will conduct an electrical appli-

ance business at Williamsport, Pennsylvania. Incorporated capital, \$25,000. Incorporators: Harry S. Orth, 415 Howard Street, South Williamsport, and others.

The Electric Maid Shop of which J. F. McCullough, Jr., is proprietor, announces its opening at 417 George Street, New Brunswick, New Jersey. A complete line of electrical supplies and appliances will be carried.

A. D. Whitson has opened an electrical supply store at Pulaski, Tennessee.

Reliance Electric Company is engaged in the electrical supply business at Camden, New Jersey. Incorporated capital, \$50,000. Incorporators: Wm. D. Lippincott, 35 North Fourth Street, Camden, and others.

E. P. Kinney is locating at 117 East Ottawa Street, Lansing, Michigan, where an electrical supply store is being opened.

Coney Island Radio Shop will feature an extensive line of radio and electrical supplies at 1016 Coney Island Avenue, Brooklyn, New York.

Hinckley Electric Company has established headquarters at Osterville, Massachusetts. Incorporated capital, \$50,000. Incorporators: L. Hinckley, Osterville, and others.

Neer Bros. Electric Shop is open for business at 300 South Summit Street, Arkansas City, Kansas.

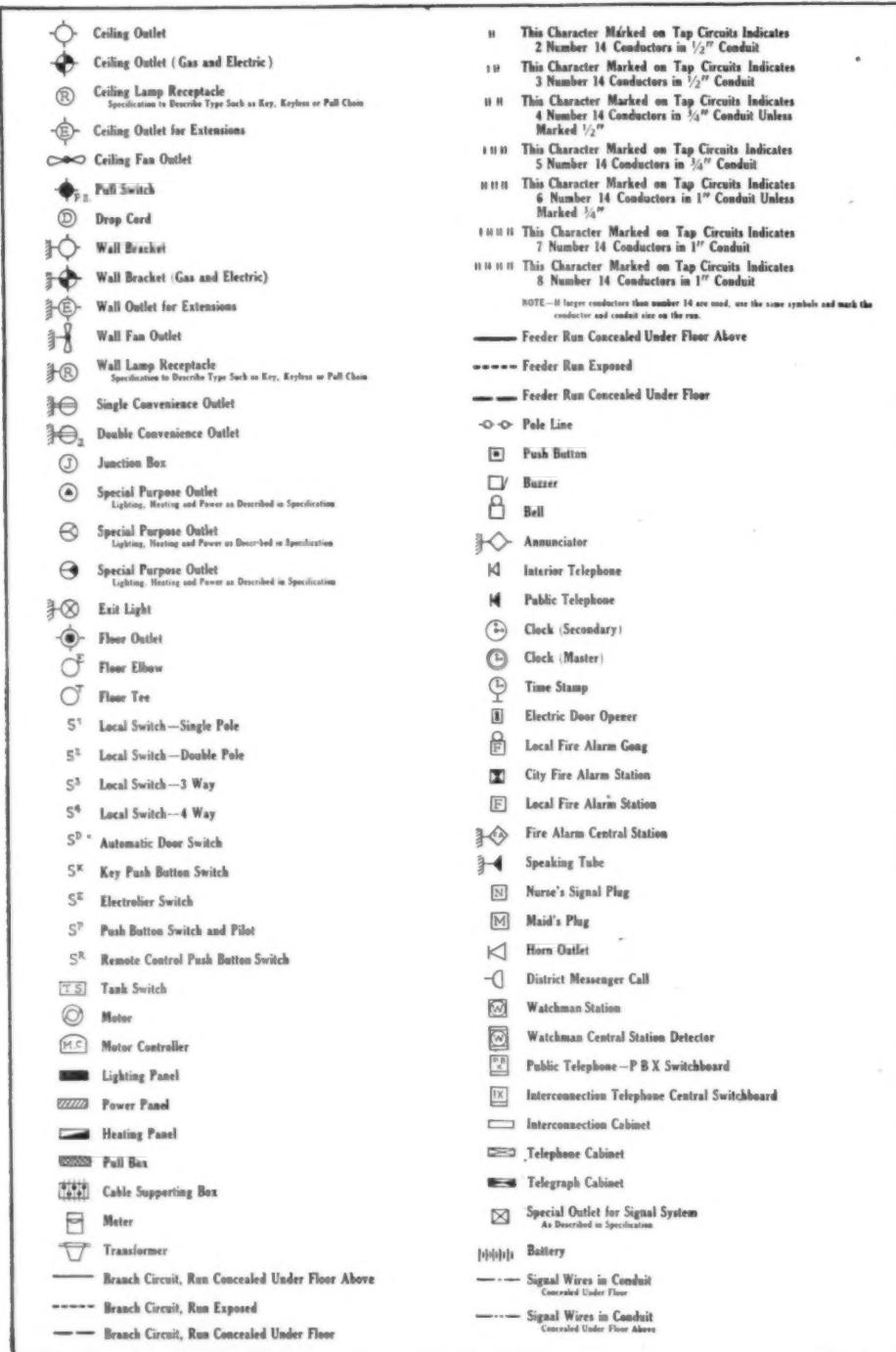
The O. K. Electric Company will conduct an electrical supply and appliance business at 175 Smith Street, Perth Amboy, New Jersey. Incorporated capital, \$100,000. Incorporators: S. Kauffman, 175 Smith Street, Perth Amboy, and others.

G. W. Nottley has opened an electrical supply store at 12942 Michigan Avenue, Springwells, Michigan.

Window Display Prizes

Five cash prizes totalling \$135 are offered by the P. A. Geier Company of Cleveland for window displays featuring cleaners made by that company. It is a condition of the competition that the photographs submitted must be based upon display material furnished by the company in connection with its spring housecleaning sales campaign which will culminate in Royal week, April 28 to May 3. Competition closes May 10.

New Standard Wiring Symbols



As announced in these columns last month, the revision of the Standard Wiring Symbols has been completed and the new symbols are now released by the American Engineering Standards Committee, as shown above. The Association of Electragists, as one of the sponsors, is also mailing copies of these new symbols to the membership.

Concerning a Product and a Trade Mark—

WIRING



DEVICES

The idea back of the "DIAMOND H" Trade Mark—

THOROUGHNESS — QUALITY — SERVICE

Thoroughness in design, materials and construction can alone produce quality. Nothing but quality can give service. Nothing but a service-giving capacity can create a permanent and growing business.

In the "Diamond H" trade mark this company has aimed to symbolize the utmost of value to the electrical contractor.

THE HART MANUFACTURING COMPANY

HARTFORD, CONN.

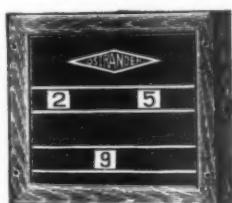
NEW YORK
CHICAGO

BOSTON
LOS ANGELES

DETROIT
CLEVELAND

DENVER
LOUISVILLE

TORONTO,
CANADA



Gravity Drop



Needle Drop



Target Drop

HOUSE ANNUNCIATORS



ANNUNCIATORS

Our Annunciators have stood the test of over 30 years of exacting service. We also manufacture Hospital, Lamp, Burglar Alarm, and Fire Alarm Types. They are designed to operate on battery or transformer current, and can be supplied with wood or metal cases.

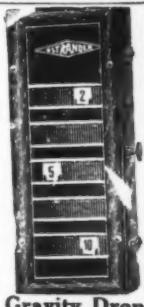
Our Engineering Department is prepared to design any Special Annunciator to comply with your requirements.

W. R. OSTRANDER & CO.

MAIN OFFICE:
371 Broadway,
New York

FACTORY:
83-89 Clifton Place,
Brooklyn, N. Y.

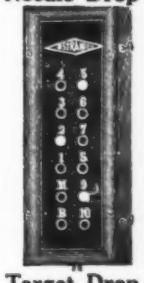
ELEVATOR ANNUNCIATORS



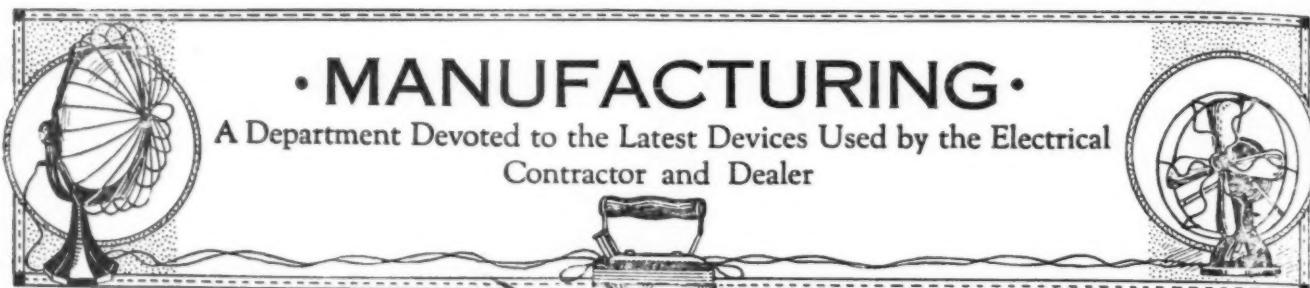
Gravity Drop



Needle Drop



Target Drop

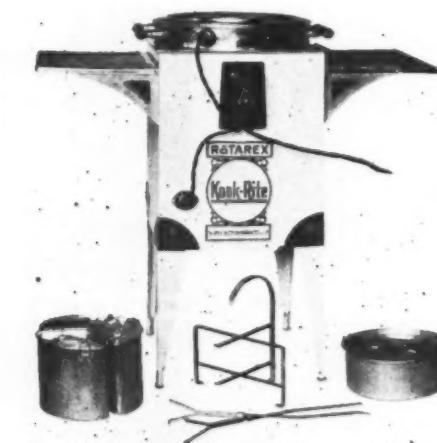


Improved Model Kook-Rite

A number of changes have been made in the new Kook Rite, manufactured and distributed by the Apex Electrical Distributing Company of Cleveland, which improve its service and reduce to the minimum the likelihood of trouble developing.

The body is of heavy gauge sheet steel and porcelain enamel. It is fifteen inches square and thirty-two inches high from the bottom of the legs to the top of the cover. Instead of being fastened on by screws the shelves are easily detachable by lifting them up.

The top part of the stove is made of heavy gauge sheet aluminum, locked to the upper edge of the well. The insulation between the well and the container consists of two inches of mineral



wool. There are two heats, one of 250 watts and the other of 410 watts. Nichrome wire is used for the heating element and is doubled and thoroughly insulated.

The timer is a special clock movement so constructed that the complete circuit of the dial is effected in just two hours.

Baby Denzar Unit

Believing that many housewives object to enclosed units for the kitchen because of the desire to use the socket as a convenience outlet, the Beardslee

Chandelier Mfg. Co. of Chicago has just placed on the market a new luminaire.

This new unit is known as Type P.



S. Baby Denzar, which it is claimed has all the advantages of the standard unit of this name. The button projecting from the side of the plug in switch controls the light, while a convenience outlet in the bottom of the switch furnishes current for the electric iron, toaster, or whatever other appliance the housewife may wish to use.

Simplex Electric Iron

A new iron has been brought out by the Simplex Electric Heating Company, Cambridge, Mass. Enclosed coil ni-



chrome heating element is used, and one of its features is an all steel plug.

A Bakelite ball grip on the anti kink spring provides a convenient means of

connecting and disconnecting the iron. In combination with the spring which connects it to the plug the ball grip assures a quick break of the circuit when detaching the iron. This eliminates excessive arcing and prolongs the life of the contacts.

An air cooled stand serves to insure garments against scorching, and air cooled terminal guards keep the plug and contacts cool.

Two New Motors

The Western Electric Company offers two new lines of motors, namely, single phase motors, type SCR, adaptable to a wide range of industrial applications and a line of continuous duty



riveted frame polyphase motors, redesigned types, KT and KQ.

SCR Motors start as repulsion type and operate on the squirrel cage induction principle which entirely eliminates the short circuiting switches heretofore considered essential. They combine high starting torque with low starting current. Operating character-



istics are similar to those of the induction motor. Both maximum and accelerating torque approximate 200 percent of full load torque without any low points during acceleration.

The KT polyphase motors form

April, 1924

Rubber Insulated Wires and Cables



National Electrical Code Standard
Intermediate (Red) Thirty Per Cent

Wire built under the direct supervision of experienced engineers, skillfully and honestly manufactured with one purpose and result.

Continuous Service

A-A WIRE CO., Inc.
FACTORY: NEWARK, N. J.
Sales Offices: 110 East 42nd Street,
New York City

PARANITE

RUBBER COVERED WIRES AND CABLES

The Standard for THIRTY-THREE Years



For all purposes. Inside, Outside, Aerial,
Underground and Submarine Use.

IF IT'S **PARANITE** IT'S RIGHT

INDIANA RUBBER & INSULATED WIRE CO.
JONESBORO, INDIANA

New York Representatives:

The Thomas & Betts Co.,
63 Vesey St., New York City

Chicago Branch:

Indiana Rubber & Insulated Wire Co.
210 Marquette Bldg., Chicago.

Strength

is first and foremost of all considerations entering into the construction of

'UNION' RENEWABLE FUSES

No other fuse is built so ruggedly. No other can be renewed so quickly. That explains why no other fuse withstands so many blowouts and why the

"UNION" Saves More than ANY
Other Renewable Fuse

At Leading Dealers and Jobbers

Write for Catalog

CHICAGO FUSE MFG. COMPANY

Manufacturers also of
Switch and Outlet Boxes,
Cut-Out Bases, Fuse Plugs
Fuse Wire and Automobile
Fuses.

CHICAGO
NEW YORK

REG. U.S.
PAT.OFF.



new and complete line. They are 40 degrees, continuous duty riveted frame. Sizes up to 15 h.p. The electrical improvements comprise reduced heating, higher efficiency, higher power factor at full and fractional loads, and increased starting torque.

The principal mechanical changes include, between 50 and 100 percent increase of oil reservoir capacity, a new method of directing ventilating air which assists cooling and prevents dirt settling on the windings and a "cast" one piece rotor without joints or high resistance spots.

Wire Fittings for Radio

An assortment of wire fittings for radio just placed on the market by the H. B. Sherman Mfg. Company of Battle Creek, Michigan, contains terminals for use in building radiosets and wire fittings for installing them. Fixture



connectors are included, which makes connections between wires without soldering. The assortment comes in a handsome display box, and the price of each article is plainly marked.

Induction Time Relay

A new type of induction time delay overload relay, to be known as the IA-201, has been placed on the market by the General Electric Company. The contact mechanism of this relay is of an improved design. The contacts



themselves cannot be closed by vibration or jar. A target is provided to indicate that the relay has operated.

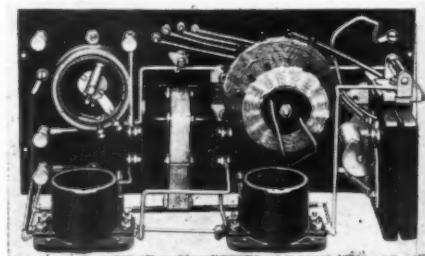
The stationary contacts are two phosphor bronze flexible fingers with silver

tips, spaced horizontally one above the other on an insulating block. Carried on the gear which meshes with the pinion on the disc shaft is a small insulating block supporting a silver plate which bridges the two contact fingers and closes the contact circuit.

This silver plate is pivoted at the center, allowing it to adjust itself to the contacts, and thus remove any possibility of failure to close because of misalignment of the contact fingers. The gear also carries a small armature which is attracted and held by a coil in series with the contact circuit, thereby insuring good contact until the tripping circuit is interrupted by some external means.

New Two Tube Receiver

The New Crosley Model 51 set, which sells for \$18.50—rear view here illustrated—consists of a detector using the Armstrong regenerative tuning and detector circuit, with the addition of one stage of audio frequency amplification. This makes it possible to use a loud speaker upon local stations or with



stations that have exceptionally high power transmitters.

One multistat takes care of both filament voltages in the two tubes used. Provision is made for a C battery and a grid leak if the owner desires to use them. A two step audio frequency amplifier may be used in connection with this set. Production of this set reached over 500 a day within twenty four days after the set was made from a suggestion by Powel Crosley, Jr., who conceived the idea while on a hunting trip in Tennessee.

Condensed Notes of Interest to the Trade

To aid dealers, contractors and central stations in the sale of commercial lighting units, the F. W. Wakefield Brass Company of Vermilion, Ohio, has issued a new folder descriptive of Red Spot Hangers equipped with various popular urn shaped glassware.

The American Steel and Wire Company of Chicago is undertaking an almost complete electrification of its three plants in Worcester, Mass., where special products of the corporation are manufactured.

Killark Electric Mfg. Company of St. Louis announce new sales agencies as follows: E. G. Hohs, 155 Colbeck St., Toronto, Ontario—Province of Ontario; G. L. MacGillivray & Co., Ltd., 3 St. Nicholas St., Montreal, Quebec—Province of Quebec; and George G. Young & Co., Bourse Building, Philadelphia—Eastern Pennsylvania, Southern New Jersey and Delaware.

A new catalog on Industrial Safety Type Switchboards has been issued by the Mutual Electric and Machine Company of Detroit. It is attractively printed and is profusely illustrated with carefully planned halftone views.

Henry D. Sears announces that a stock of Weber Wiring Devices is now being carried in Chicago at 131 South Desplaines Street, corner of West Adams, in order to better serve the western trade. Paul J. Cratty has been made western manager at this address.

Joseph H. Schmidt, who for the past five years was attached to the Radio Testing Laboratory at Washington, D. C., Navy Yard, has joined the staff of C. Brandes, Inc., of New York City.

As of March first the General Electric Company moved the headquarters of its central district from Cincinnati to Cleveland.

Efforts recently have been made by the Apex Electrical Distributing Company of Cleveland to obtain the return of old cleaners of any make as part payment on new cleaners of its manufacture. The public is being appealed to through popular magazine advertising and the trade through direct mail and advertising in its own trade papers.

A catalog has been issued by Partrick & Wilkins Company of Philadelphia on Low Voltage Systems for use in hospital nurse calls, school houses, Y. M. C. A.'s, hotel and house telephones, hotel return calls, and emergency gong fire alarms.

In order to increase production to meet the demand for radio headsets and loud speakers, Brandes Products Corp., a subsidiary of C. Brandes, Inc., New York City, has started an addition to its factory in Newark, N. J.